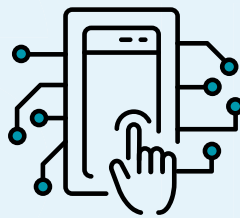
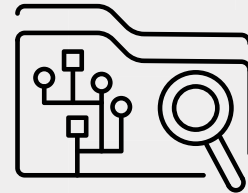
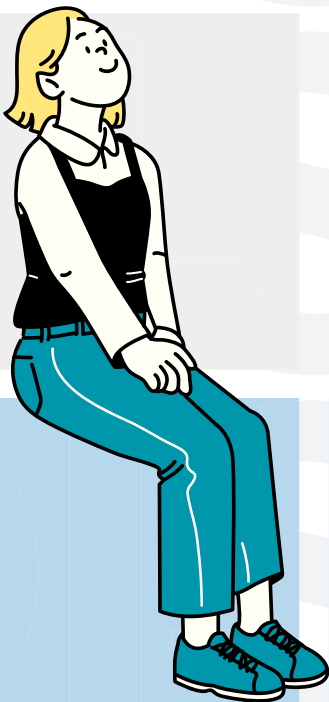
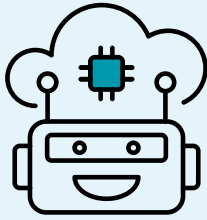


December 2023

Global Urban Innovation

Policy Proposal for Daejeon



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Startups

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GLOBAL INNOVATION



PART 1.

Global Talents Fostering Local Triumphs



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1.1 Background and Importance of the Initiative

In the contemporary global landscape, we are witnessing a profound transformation driven by the digital revolution, fundamentally altering the way societies function, communicate, and progress. Governments across the globe are recognizing the imperative need to foster innovation and enhance technological capabilities to stay at the forefront of this change. One of the critical challenges emerging from this scenario is urban growth, a phenomenon that has escalated to become a major concern for policy makers and administrators. Addressing this issue necessitates the implementation of inclusive policies and a robust infrastructure development strategy.

As business and education transcend borders, cities are required to adopt a proactive and integrative approach, synchronizing local ecosystems with the global markets. This globalization trend creates a unique opportunity for cities to leverage the potential of high-skilled foreigners. These individuals, with their cultural acumen and global perspectives, can act as pivotal agents in building bridges between local ecosystems and their native lands, thereby enriching the social fabric and enhancing bilateral relations.

1.2 Current Local Issues and Status in Daejeon City

Tracing back to the early 2000s, Daejeon City has been at the epicenter of a vibrant entrepreneurial movement, primarily fueled by the proliferation of research institutes. This has cultivated a rich innovation ecosystem, fostering Industry-Academia collaboration and being solidified by initiatives such as the special law for Daedeok Innopolis in 2004. Today, Daejeon stands tall as Korea's quintessential World-Class Innovation Cluster, a testament to its sustained efforts in nurturing innovation.

By 2021, Daejeon has been the recipient of a significant 28% of the Government's R&D Budget, a clear indication of the city's pivotal role in the national innovation landscape.

In its stride to maintain and elevate this status, Daejeon City has been proactive in implementing strategic policies such as the "2022 Smart City Action Plan" and positioning itself as the "City of the 4th Industrial Revolution". These initiatives underscore the city's commitment to fostering a conducive environment for innovation, technological advancement, and sustainable urban development.

In light of these insights, it becomes evident that the proposed policy initiative aimed at creating a global settlement environment, fostering career development, and establishing a global community for foreign students and researchers in Daejeon, is not just timely but also of paramount importance. It stands as a strategic imperative to leverage the city's innovation potential, integrate it with global networks, and ensure its continued growth and relevance in the digital age. Building upon the robust innovation ecosystem that Daejeon City has meticulously cultivated, there are critical areas that necessitate immediate attention and strategic intervention to ensure sustainable growth and global competitiveness.

(1) Economic Insights

Looking into the economic dimension of Daejeon, particularly its export dynamics (See Table 1), provides valuable insights into the city's economic health and its trajectory in the global market. Analyzing export values from 2016 to 2021 reveals critical patterns and trends.

For example, by 2019: The city experienced a dip in its export values, decreasing more than 10%. This downturn highlights a period of economic challenge or a potential restructuring in the city's export sectors. Nevertheless, by 2021, Daejeon made a remarkable recovery, with export values surging to 5 billion USD. This rebound demonstrates the city's resilience and capability to navigate through economic adversities.

Coming to recent data, The 2021 export values slightly decreased (1.2%), revealing an overall growth rate of around 4% over the period, which is not competitive with other primer cities around the world.

Table 1. Daejeon Exports by Year

Year	Exports (Expressed in thousand dollars)
2016	4,163,313
2017	4,453,922
2018	4,514,583
2019	4,047,925
2020	5,018,185
2021	4,958,668

* Source: 61st Daejeon Statistical Yearbook, 2022

The data analysis reveals Daejeon as an export-oriented economy, showcasing periods of significant growth and resilience in the face of downturns. However, the variability in export growth rates also underscores the need for stability and a strategic approach to sustain economic momentum. Moreover, the slight decrease in exports from 2020 to 2021 indicates a crucial juncture for the city to reassess its strategies, ensuring that it remains competitive and continues to grow in the international markets.

The proposed "Digital Ambassadors" policy to create a global settlement environment and support career development for foreign students and researchers is timely. By tapping into the global talent pool, Daejeon has the potential to inject fresh perspectives, innovation, and expertise into its economic fabric, further boosting its export capabilities. Furthermore, this initiative will play a pivotal role in acting as a catalyst for sustainable growth, innovation, and global integration.

(2) Addressing the Increasing Demand for Opportunities

The city is witnessing an unprecedented influx of foreign talent, encompassing students and researchers, attracted by the opportunities and the conducive environment for innovation that Daejeon offers. This burgeoning talent pool presents a golden opportunity for the city. By effectively tapping into this reservoir of knowledge and expertise, Daejeon can further bolster its status as a global scientific hub and a leader in innovation.

However, to fully capitalize on this, there is a need to create more opportunities, nurture an inclusive environment, and provide support mechanisms to integrate this foreign talent into the local ecosystem, thereby facilitating a symbiotic relationship between the city's innovation infrastructure and the global market.

(3) Daejeon: A Global Scientific Hub and Investment Destination

Daejeon's journey over the past four decades has solidified its reputation as a major city in the Republic of Korea, leading the future of the scientific field and innovation. Recognized as Korea's best investment destination, Daejeon has consistently demonstrated its commitment to fostering a thriving innovation ecosystem.

In terms of economic indicators, the city boasts impressive figures, with exports amounting to USD 4.953 billion and imports at USD 3.813 billion. These figures not only reflect the city's economic vitality but also underscore its integral role in the national and global economic landscape.

(4) Moving Forward

As Daejeon continues to evolve and adapt to the changing global dynamics, the city stands at a crucial juncture. There is a compelling need to strategize, innovate, and implement policies that will not only address the current challenges but also pave the way for future growth and prosperity. The proposed policy initiative is a step in this direction, aiming to create a global settlement environment, enhance career development opportunities, and foster a global community that will seamlessly integrate the foreign talent into Daejeon's innovation ecosystem, ensuring mutual growth and success.

By creating a nurturing environment for foreign talent and fostering a global community, Daejeon is not just investing in individuals but is strategically investing in its future, ensuring that the city continues to thrive, innovate, and lead in the international arena.

2.1 International Policy Trends

The global landscape of public policy is continuously evolving, with various innovative initiatives being implemented to foster economic growth, inclusivity, and technological advancement. Cities such as Toronto, Berlin or Chicago are recognizing the value of integrating their tech ecosystems with foreign talent to reach global markets. By leveraging their international communities, these cities effectively promote their local innovations and startups on a global stage. This approach not only facilitates international business collaborations but also attracts foreign direct investments, talent, and knowledge to the city.

(1) Toronto Ambassadors Program

The Information and Communications Technology Council in Toronto has implemented the Ambassador Program, a gender-inclusive initiative designed to empower women in the digital economy. This program offers a robust suite of tools and resources, including an assessment tool for matchmaking, an online hub, strategies for employee retention, as well as numerous networking opportunities.

This initiative reflects a broader global trend towards greater inclusivity and gender equality in the workplace, particularly within the rapidly growing digital and tech industries.

Figure 1. Toronto Ambassadors Program

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Ambassador Program

[Register](#)

When & where

- 📍 ON / AB / QC / NS / Online
- 📅 September 2022 - November 2023

Who it's for

- 👤 Employers in the digital economy sector

* Source: eTalent Canada(2022)

(2) Berlin Start Alliance

Berlin has positioned itself as a leader in fostering global connectivity through the Start Alliance program. This initiative is a business exchange program specifically targeting technology hubs across geographic locales, with a focus on promoting startup growth and business development. By creating these connections, Berlin is actively facilitating the exchange of ideas, resources, and opportunities, showcasing a trend in international policy towards greater interconnectivity and support for innovation ecosystems.

The Start Alliance experience has supported 83 companies in the overseas ecosystem fostering Berlin's local technology, strengthening the connection & collaboration between cities, and opening doors for startups to improve their internationalization strategies.

Figure 2. Berlin Start Alliance



* Source: eTalent Canada(2022)

(3) Chicago New Americans Plan

The New Americans Plan in Chicago represents a pioneering approach to immigrant integration and economic development. This initiative assists immigrants in establishing new export ventures, providing essential training, connections, and business acumen. This policy trend highlights the increasing recognition of the valuable contributions that immigrants bring to local economies, as well as the importance of providing supportive structures to facilitate their success.

By supporting immigrants and leveraging their unique skills and networks, the City of Chicago has reached double the exports of companies with foreign talent, fostered by a notable increase of 60% in the chances of exporting to their personnel native countries.

Figure 3. The Chicago New Americans Plan



* Source : City of Chicago(2015)

2.2 Domestic Policy Trends

Turning our focus to the domestic context, it is imperative to analyze the prevailing policy trends within Daejeon and Korea at large to create a comprehensive understanding of the local policy landscape. South Korea's emphasis on the Fourth Industrial Revolution, as showcased in its national strategies, aligns well with the objectives of the Daejeon Digital Ambassadors Policy. The nation is making substantial efforts in promoting digital transformation, entrepreneurship, and international collaboration. By implementing this policy, Daejeon would be setting a precedent, further bolstering South Korea's image as a frontrunner in technological innovation and global collaboration.

(1) Daejeon Policy Trends

In Daejeon, the "2022 Smart City Creation Action Plan" represents a significant stride towards realizing a smart, interconnected urban environment. Key focus areas include fostering a smart economy, ensuring public administration is accessible to all, and establishing a Smart City underpinned by data, networks, and artificial intelligence. The city aims to become a data-rich environment, with dense human-physical connections, and a big data platform to drive economic growth.

(2) Korea Policy Trends

Across Korea, there is a palpable shift towards digital transformation and innovation, with significant investments in technology and infrastructure. The government is actively promoting policies to foster a conducive environment for startups, drive research and development, and facilitate the integration of advanced technologies into various sectors of the economy.

Also, Korea has made significant progress in recent years in promoting inclusion and diversity. In 2019, the Korean government passed the Act on the Promotion of the Rights of Persons with Disabilities and has also taken steps to promote gender equality. However, better policies for immigration are still not supportive enough.

Despite these advances, there are still some challenges that Korea must address in order to promote inclusion and diversity in employment and access to public services. Immigrants and other minority groups often face discrimination in housing and employment.

3.1 SWOT Analysis

The SWOT analysis offers a comprehensive evaluation of the proposed policy initiative aimed at fostering a global settlement environment, enhancing career development, and cultivating a global community for foreign students and researchers in Daejeon.

This analysis meticulously dissects the project's internal and external dimensions, categorizing them into strengths, weaknesses, opportunities, and threats. The strengths and opportunities highlight the project's potential to leverage Daejeon's innovative capabilities and strategic networks to bolster its global reputation, attract foreign investments, and serve as an exemplar within South Korea.

On the other hand, the weaknesses and threats underscore the challenges and potential impediments, including the need for unwavering commitment from diverse stakeholders, the navigation of cultural and linguistic barriers, as well as the competitive landscape marked by similar initiatives from other cities.

By elucidating these facets, the SWOT analysis provides invaluable insights, guiding the strategic planning and implementation of the initiative, ensuring its alignment with both local needs and global trends, and ultimately contributing to the realization of Daejeon's vision as a world-class innovation hub (See Figure 4).

(1) Strengths

- **Innovation**

By leveraging the international experience and diverse backgrounds of foreign students and researchers, the project has the potential to infuse new perspectives into the local innovation ecosystem. This will facilitate collaborative business growth and contribute to the development of unique solutions to existing challenges.

- **Strategic Networks**

The project aims to utilize data-informed decisions to strategically expand and deepen market opportunities. By forging strategic partnerships and networks, Daejeon can enhance its connectivity with global markets and innovation ecosystems, driving sustained economic growth.

(2) Opportunities

- **Enhance Global Reputation**

This initiative presents an excellent opportunity to improve Daejeon's standing on the world stage as a premier technology and innovation hub. Showcasing the city's commitment to inclusivity and global engagement can attract international attention and acclaim.

- **Increase exports share**

By creating a welcoming and supportive environment for foreign talent, Daejeon is poised to foster exports from local companies. This influx of resources and know can further strengthen the city's innovation ecosystem.

- **Serve as a Role Model**

The success of this initiative has the potential to position Daejeon as a model for other cities in South Korea, demonstrating the benefits of actively integrating foreign talent into the local ecosystem and fostering international collaboration.

(2) Weaknesses

- **Commitment from Stakeholders**

The effectiveness of the project hinges on securing a high level of commitment from a diverse array of stakeholders, including government bodies, academic institutions, businesses, and the foreign talent themselves. Ensuring alignment of interests and sustained engagement can be challenging.

- **Cultural and Linguistic Barriers:**

There may be potential cultural and linguistic barriers that could hinder the successful implementation of the initiative. Proactive measures and support systems need to be in place to mitigate these challenges and facilitate smooth integration.

(3) Threats

- **Competition from Other Cities**

The global race to attract foreign talent is highly competitive, with numerous other cities launching similar initiatives. Staying ahead of the curve and continually innovating the program will be crucial to maintaining its attractiveness and effectiveness.

- **Variability in Ambassador Engagement:**

The project's reliance on ambassadors means that different levels of experience, commitment, and dedication among these individuals could lead to inconsistencies in the program's delivery and impact. Establishing robust training and support systems can help mitigate this risk.

Figure 4. SWOT Analysis

Strengths	Opportunities
<ul style="list-style-type: none"> • Innovation • Strategic Networks 	<ul style="list-style-type: none"> • Enhance Global Reputation • Increase export share • Serve as a Role Model
Weaknesses	Threats
<ul style="list-style-type: none"> • Commitment from Stakeholders • Cultural and Linguistic Barriers 	<ul style="list-style-type: none"> • Competition from Other Cities • Variability in Ambassador Engagemen

* Source: Compiled by authors

3.2 PEST Analysis

The "Daejeon Digital Ambassadors" program is a pioneering initiative poised to redefine the contours of Daejeon's global engagement and digital transformation. As the nexus of international collaboration and localized growth, this program encompasses a multifaceted impact across political, economic, social, and technological domains. The potentialities and challenges inherent in such an expansive program demand a thorough examination, and a PESTEL analysis presents the ideal lens to critically assess the diverse ramifications of this policy (See Figure 5).

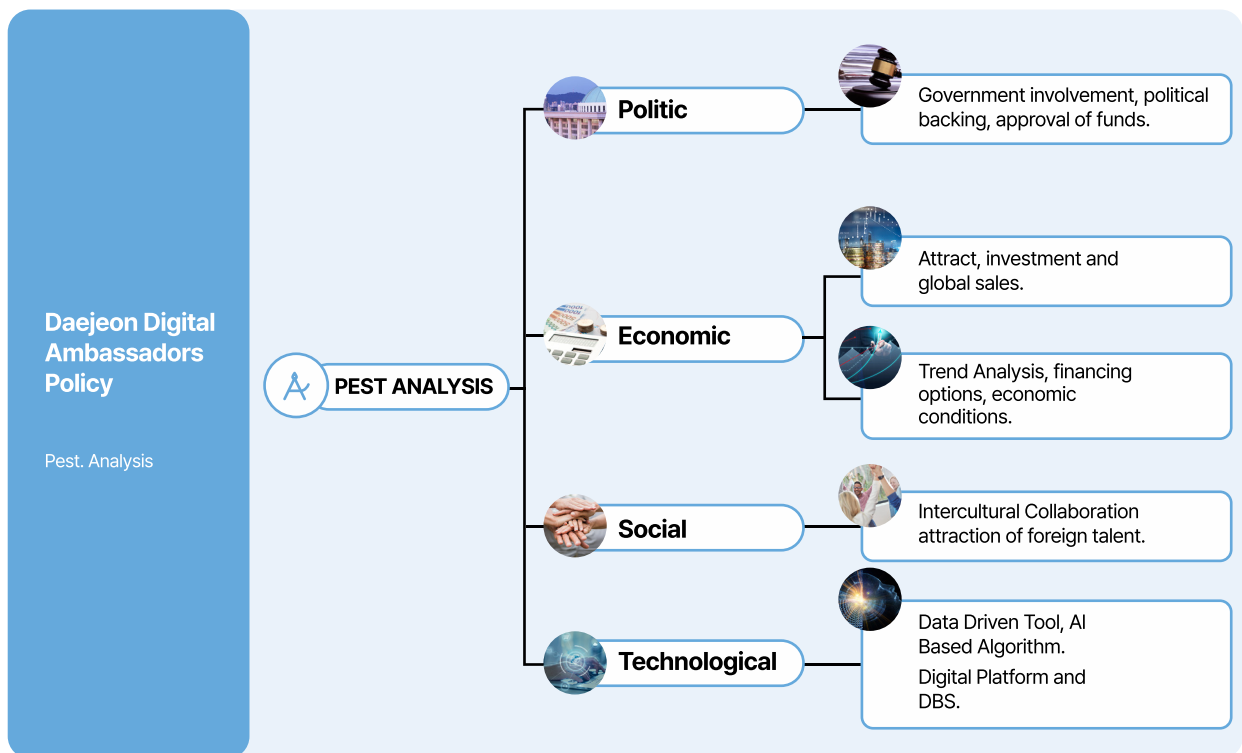
From a political perspective, although there are potential tensions with the home countries of some ambassadors, the initiative, at its core, promotes international collaboration and knowledge exchange. Economically, the program could attract significant investments to Daejeon and foster economic growth, while socially, it would promote inclusion and diversity by facilitating interaction between different cultures and communities.

Additionally, from a technological standpoint, the program boosts innovation and the adoption of digital

technologies, which is essential for growth and development in the current era. Altogether, these factors suggest that the program could not only strengthen Daejeon's position as a global technology and innovation hub, but it could also facilitate the international expansion of local businesses while simultaneously helping to meet the needs of overseas companies. Ultimately, the crucial role played by the ambassadors in facilitating these interactions and in attracting foreign investments and sales could result in an increase in the number of foreign experts in Daejeon, further strengthening the city's position on the global stage.

The digital thrust of the initiative not only aligns with contemporary technological trends but also paves the way for future innovations. The ambassadors, as key agents of this transformation, play an instrumental role in bridging Daejeon with the global community, ensuring the city's sustained prominence in a rapidly evolving world.

Figure 5. PEST Analysis



* Source: Compiled by authors

3.3 Benchmark Analysis

As we delve into the comprehensive analysis of Daejeon's proposed Digital Ambassadors Policy, it becomes imperative to conduct a benchmark analysis against notable international policies identified in the previous chapter from Toronto, Berlin, and Chicago. This exercise aims to draw comparisons, highlight best practices, and underscore the unique value proposition of Daejeon's initiative (See Table 2).

Table 2. Benchmark Analysis(Toronto, Berlin, Chicago)

Actor	Policy	Description	Match with Daejeon Ambassadors
Toronto ICT Council (Toronto)	Ambassador Program	<p>A program to help women advance in the digital economy and provide employers with practical tools to create gender-inclusive organizations include:</p> <ol style="list-style-type: none"> 1. An assessment tool for matchmaking 2. An online hub of resources to guide organizations. 3. Strategies and practices to support, attract, and retain gender-diverse employees 4. In-person and virtual events and networking opportunities 5. Opportunities across Canada's tech ecosystem, connecting people committed to actionable changes 	<ul style="list-style-type: none"> ✓ Inclusion ✓ Networking ✓ Business Development ✓ Going Global
Berlin Partner for Business and Technology	Start Alliance	The main rationale was to create a business exchange program that targets and connects geographic 'technology hubs'. Focusing on promoting start-ups and business growth in general.	<ul style="list-style-type: none"> ✓ Networking ✓ Business Development ✓ Local technology hubs
City of Chicago	New Americans Plan	Helping immigrant entrepreneurs leverage their language skills and networks in their native countries. The initiatives assist immigrants in creating new export ventures by providing them with training, connections, and business knowledge. The initiatives are expected to double citywide exports and boost the local economy.	<ul style="list-style-type: none"> ✓ Networking ✓ Business Development ✓ Local technology hubs ✓ Going Global

* Source: Compiled by authors

Benchmarking against the Toronto Ambassador Program, Daejeon's Digital Ambassadors Policy aligns well in terms of fostering inclusion and networking while also facilitating business development and global engagement. The comprehensive approach of Toronto's program can serve as a valuable model for Daejeon, emphasizing the importance of practical tools and resources in creating an inclusive and supportive environment.

Daejeon's Digital Ambassadors Policy also finds resonance with Berlin's Start Alliance in terms of networking, nurturing local technology hubs, and business development. By benchmarking against Berlin's initiative, Daejeon can glean insights into the effective promotion of startups and cultivating a vibrant technology ecosystem.

Finally, comparing Daejeon's policy with the New Americas Plan, there are clear parallels in networking, business development, fostering local technology hubs, and global engagement. Chicago's focus on leveraging the unique assets of immigrant entrepreneurs can inform Daejeon's approach, ensuring that foreign talent is effectively integrated and utilized for economic prosperity.

In sum, the benchmark analysis underscores the strategic alignment of Daejeon's Digital Ambassadors Policy with international best practices while also highlighting areas of unique strength and opportunity. Drawing from the successes and insights of Toronto, Berlin, and Chicago, Daejeon is poised to create a transformative policy that not only fosters inclusion and supports talent but also propels the city towards greater innovation, global engagement, and economic vitality. This initiative represents a critical step in solidifying Daejeon's position as a world-class innovation hub and a leader in the digital era.

3.4 Match with best practices in policymaking by OECD

The OECD Digital Government Policy Framework (DGPF) serves as a crucial policy tool, aiding governmental bodies in pinpointing essential elements necessary for the successful formulation and execution of strategic initiatives aimed at elevating the digital sophistication of their public sectors. This tool facilitates the assessment to develop mature public policies by focusing on six core dimensions namely: digital by design, data-driven public sector, government as a platform, open by default, user-driven, and proactiveness.

The proposed Digital Ambassadors Policy strongly aligns with the OECD Digital Government Policy Framework, showcasing a commitment to innovative, user-centric, and data-driven governance. Analyzing the policy across various dimensions of the framework provides a holistic view of its strategic approach and potential for transformative impact (See Table 3).

Based on the OECD Digital Government Framework, it is noted that the DDA policy fosters Daejeon City to become fundamentally "Digital by Design," while creating an inclusive, scalable, and secure technology ecosystem to promote the city's innovation ecosystem on a global scale.

It also leverages digital means for connection, learning, and promotion from the outset, the policy ensures that the infrastructure is inherently digital, facilitating seamless interaction and engagement. This approach aligns with best practices in digital government, emphasizing the importance of embedding digital considerations into the very fabric of policy design and implementation.

Furthermore, the policy exemplifies a "Data-driven" approach, utilizing an AI-based matchmaking algorithm and comprehensive management dashboards. This data-centric strategy ensures that decisions are informed, accurate, and rooted in empirical evidence. By prioritizing data and analytics, Daejeon positions itself to offer tailored recommendations and insights, enhancing the effectiveness and efficiency of the Digital Ambassadors initiative.

Another important fact is the proposed government platform, which operates under the OECD's "Government as a Platform" paradigm, serving as a dynamic and interactive hub for various stakeholders. By listing calls, events, and managing products, the platform facilitates collaboration, connection, and contribution among Daejeon companies, foreign students, and researchers. This approach transforms the government's role, shifting from a service provider to a platform enabler, fostering a vibrant and interconnected ecosystem.

When it comes to placing foreign students and researchers at the center, the policy adopts a "User-driven" ethos,

focusing on the experiences, knowledge, and competencies of digital ambassadors. Following the design and featuring of high-talented profiles, continuous learning, and networking, which also reflects a deep commitment to user-centricity, ensuring that the policy caters to the diverse needs and preferences of the companies and high-talented foreigners targeted by this exercise.

Talking about “Proactiveness,” as stated before, the government takes bold steps to connect local stakeholders with global markets, collaborators, and investors. Anticipating the needs for international connection and preemptively creating a platform to facilitate this, the policy embodies a forward-thinking and proactive approach, positioning Daejeon as a leader in digital governance.

Overall, aligned closely with the OECD Digital Government Policy Framework, the DDA Policy sets a gold standard for digital governance, ensuring a strategic, user-focused, and data-driven approach. This initiative not only enhances Daejeon’s global visibility and connectivity but also underscores the city’s commitment to Korea’s innovation, collaboration, and excellence in the digital era. Through this policy, Daejeon demonstrates how local government initiatives can be transformed into catalysts for innovation, engagement, and global integration.

Table 3. Matching with the OECD Digital Government Policy Framework

The OECD Digital Government Policy Framework	Match with the Daejeon Ambassadors Policy
Digital by design	Creating an inclusive, scalable, and secure technology tool to promote Daejeon’s ecosystem abroad. It uses digital means to facilitate connection, learning, and promotion, ensuring the infrastructure is fundamentally digital from its inception.
Data-driven	Through its AI-based matchmaking algorithm and management dashboards. These features prioritize and utilize data for making informed decisions, thereby ensuring that actions and recommendations are based on empirical evidence and analytics.
Government as a Platform	A proposed government platform that lists calls, events, and manages products. This platform is intended to operate as an interactive hub where different stakeholders — such as Daejeon companies, foreign students, and researchers — can connect, collaborate, and contribute.
User-driven	By enlisting foreign students and researchers as digital ambassadors, the policy focuses on the users’ (in this case, the ambassadors’) experiences, knowledge, and competencies. The platform’s design, with profiles, continuous learning modules, and networking tools, emphasizes a user-centric approach, catering to the needs and preferences of its diverse stakeholders.
Proactiveness	The Daejeon Government proactively boosts Daejeon’s stakeholders to foreign markets, collaborators, and investors. By anticipating the needs of Daejeon-based entities to connect with global markets and preemptively creating a platform for this, the policy embodies a forward-thinking approach.

* Source: Compiled by authors based on (OECD, 2020)

3.5 Alignment with Sustainable Development Goals

The Daejeon Digital Ambassadors Policy showcases a strong alignment with the United Nations Sustainable Development Goals (SDGs), reflecting a commitment to fostering sustainable and inclusive economic growth while ensuring innovative infrastructural development and reducing inequalities.

(1) SDG 8. Decent Work and Economic Growth

The Digital Ambassadors Policy actively resonates with the goals of SDG 8, specifically:

- 8.2 Diversify, Innovate and Upgrade for Economic Productivity. The policy seeks to invigorate the local economy of Daejeon by integrating diverse foreign talents, promoting innovation through digital means, and striving for excellence.
- 8.3 Promote Policies to Support Job Creation and Growing Enterprises. By facilitating global networking opportunities and providing a platform for Daejeon-based entities, the policy promotes job creation and the growth of local enterprises.
- 8.5 Full Employment and Decent Work with Equal Pay. Emphasizing inclusivity and equality, the policy advocates for full employment opportunities and ensures that efforts are directed toward providing equitable remuneration for all.
- 8.8 Increase Aid for Trade Support. Through global outreach and engagement, Daejeon aims to increase its trade support mechanisms, benefiting local enterprises in their global ventures.

(2) SDG9. Industry, Innovation, and Infrastructure

The policy's tenets further align with SDG 9 in these ways:

- 9.2 Promote Inclusive and Sustainable Industrialization. By incorporating diverse stakeholders and leveraging digital platforms, the policy fosters inclusive and sustainable industrial growth in Daejeon.
- 9.3 Increase Access to Financial Services and Markets. Through the proposed platform, Daejeon companies, researchers, and foreign students can access global markets, thus widening their financial prospects.
- 9.7 Support Domestic Technology Development and Industrial Diversification. By emphasizing on networking, business development, and local technology hubs, the policy aids in domestic technological advancement and promotes varied industrial growth.

(3) SDG10. Reduced Inequalities

The policy's tenets further align with SDG 10 in these ways:

- 10.2 Promote Universal Social, Economic and Political Inclusion. The policy's inclusive framework ensures that all stakeholders, irrespective of their background, have equal opportunities and are integral contributors to Daejeon's growth.
- 10.3 Ensure Equal Opportunities and End Discrimination. By emphasizing inclusivity, the policy aims to eliminate any forms of bias or discrimination, fostering an equitable environment.
- 10.7 Responsible and Well-managed Migration Policies. By enlisting foreign students and researchers as digital ambassadors, the policy ensures that migration, in this context, is handled responsibly, ensuring the well-being and integration of these ambassadors into Daejeon's ecosystem.

In essence, the alignment with these SDGs underscores the comprehensive, forward-looking, and globally-resonant vision of the Daejeon Digital Ambassadors Policy. It not only positions Daejeon as a city committed to sustainable and inclusive growth but also showcases its dedication to global initiatives and objectives.

4.1 Vision and Objectives

(1) Vision

Empowering Daejeon's global future through a cohesive digital nexus, where innovative local entities and international talent converge, collaborate, and co-create, positioning Daejeon as the prime hub for tech-forward, inclusive, and sustainable growth in the digital age.

(2) Objectives

1. Create a unified and inclusive policy denominated Daejeon Digital Ambassadors (DDA), to support Daejeon-based High-skilled foreigner's collaboration with government and local companies to enhance the city's global competitiveness.
2. Develop alliances between the public and private sectors to promote the inclusion of foreign high-skilled talent who foster the internationalization strategy of Daejeon-based companies to increase the export share and business globalization.
3. Establishing the basis for the development of a platform ecosystem to share the generated knowledge and provide business intelligence and market research for the benefit of all the participants.

4.2 Implementation Strategy and Detailed Tasks

The Implementation Strategy for the Daejeon Digital Ambassadors (DDA) program consists of three crucial components.

1. Identification and selection of qualified individuals (Digital Ambassadors).

1. Identification and selection of qualified individuals (Digital Ambassadors).

High-skilled foreigners residing in Daejeon who have connections with overseas commercial ecosystems and knowledge about foreign markets. This ensures that the selected ambassadors are well-versed in the local ecosystem and can effectively contribute to the program.

2. Digital Ecosystem

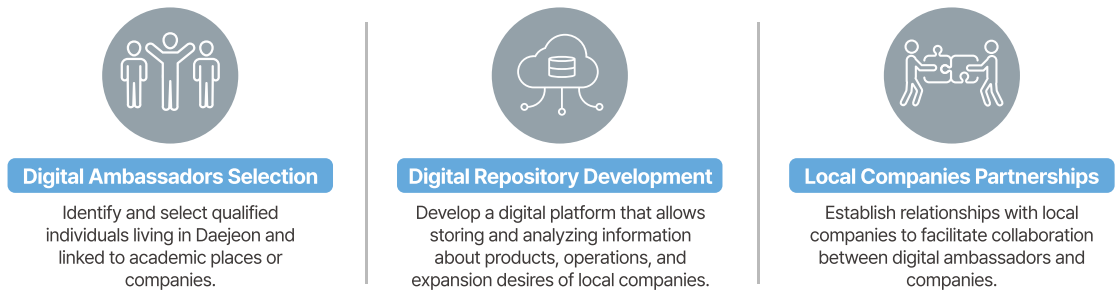
Entails the creation of a digital platform that is capable of storing and analyzing information regarding the products, operations, and expansion desires of local companies. This digital platform will serve as a business intelligence valuable resource, facilitating data-driven market research, decision-making and collaborations.

3. Partnership Development

Involves the establishment of relationships between government and local companies to facilitate collaboration with digital ambassadors and companies. This includes organizing meetings, networking events, and creating working groups to ensure a smooth exchange of ideas and resources.

Together, these three components form a comprehensive strategy for the successful implementation of the Daejeon Digital Ambassadors program (Figure 6).

Figure 6. Components of the DDA Policy



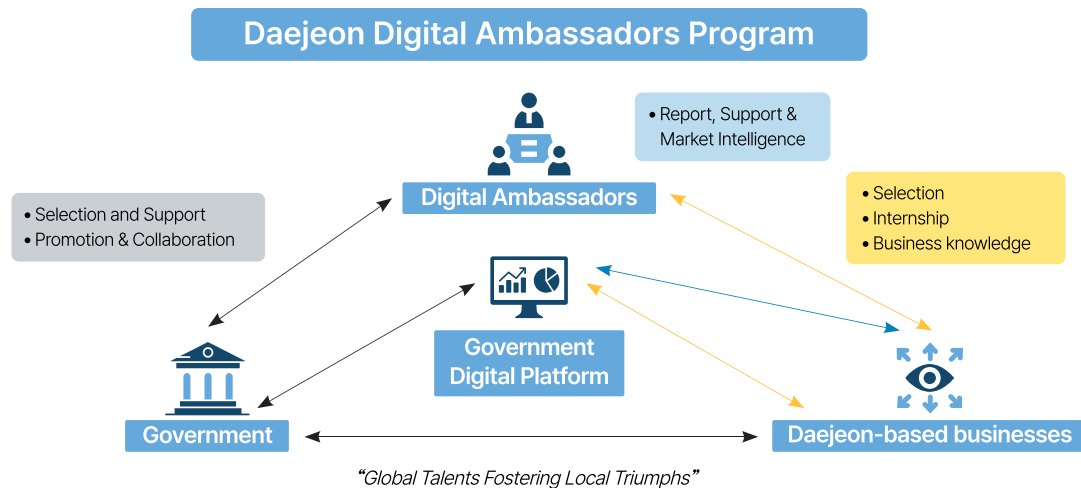
* Source: Compiled by authors

Talking about the interactions between the components and including the role of the Daejeon Government as the main stakeholder of this policy extending support for the digital ambassadors. The Government should promote the inclusion of the policy within the companies. The Daejeon-based businesses should accept and nurture the ambassadors through internships and business knowledge while receiving the benefit from the program and the provided insights of the qualified talents who provide fresh perspectives, market knowledge, and digital expertise (See Figure 7).

The DDA ecosystem will be enhanced by the development of a digital platform used to store the developed knowledge and foster business intelligence for both government and companies, establishing a source of useful and reusable knowledge that allows Daejeon City to expand its global economic fingerprint.

In summary, the Daejeon Digital Ambassadors Program constitutes a synergistic relationship between the government, digital ambassadors, and local businesses. Representing a holistic strategy to enhance the digital ecosystem of Daejeon City under the slogan "Global Talents Fostering Local Triumphs".

Figure 7. DDA Ecosystem



* Source: Compiled by authors

Once the policy is implemented, a proposed structured plan for the implementation of the Daejeon Digital Ambassadors Program, should follow the presented key phases (See Figure 8).

1. Call for Ambassadors & Companies Selection

The program initiates with an open call to potential ambassadors and local companies. This step involves a comprehensive selection process to identify the most suitable participants for the program.

2. Matchmaking Launching Events

Following the selection, a significant event is held to match the chosen ambassadors with the shortlisted companies, setting the stage for collaborative engagements.

3. Knowledge Sharing (Internship)

Selected ambassadors undergo internships with their matched companies. This phase focuses on reciprocal knowledge exchange, where ambassadors acquire local business insights while companies gain from the ambassadors' international expertise.

4. Foreign Market Entry Proposal

With the knowledge gained, ambassadors craft proposals for their respective companies to enter foreign markets. These proposals are based on comprehensive market research and the ambassadors' international insights.

5. Analysis and Feedback

The proposed strategies undergo thorough analysis, followed by constructive feedback. This iterative process ensures the refinement of the entry strategies to maximize success potential.

6. Business Intelligence Reports

Based on the analysis, detailed business intelligence reports are generated. These reports provide companies with actionable insights and data-driven strategies for their foreign market ventures.

7. Evaluation and Project Development

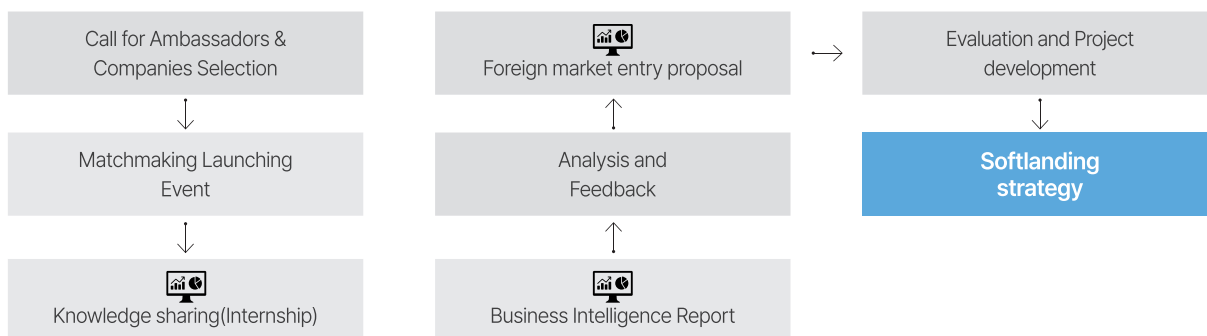
The intelligence reports undergo evaluation, leading to the development of well-defined projects tailored for foreign market entry.

8. Softlanding Strategy

The culmination of the program results in the formulation of a softlanding strategy. This strategy ensures that companies experience a smooth transition when establishing their presence in foreign markets, mitigating potential challenges and capitalizing on opportunities.

Figure 8. DDA proposed schedule

Schedule



* Source: Compiled by authors

In essence, the Daejeon Digital Ambassadors Program Schedule delineates a step-by-step roadmap to empower local businesses with the tools and expertise required for successful global market penetration.

4.3 Key Tasks

At the heart of DDA Policy some pivotal tasks need to be defined in order to guarantee the success of the proposal. This task will require the government's full attendance and guide to be implemented as follow.

Digital Ambassadors Selection:

- Create a set of criteria for the selection of digital ambassadors.
- Promote the program through appropriate channels such as universities and chambers of commerce to attract candidates.
- Evaluate candidates and select digital ambassadors.

Local Companies Partnerships:

- Identify local companies that could benefit from the program.
- Organize meetings between digital ambassadors and representatives of local companies.
- Facilitate collaboration between digital ambassadors and local companies, for example, by organizing networking events or creating working groups.

Digital Platform Development:

- Determine the requirements and specifications for the digital repository.
- Hire a development team or company to build the repository.
- Develop and test the digital repository.
- Implement the repository and train digital ambassadors and companies on how to use it.

Embarking on these tasks, the Daejeon Digital Ambassadors Program aspires to create a cohesive ecosystem that amplifies global market entry opportunities for local businesses.

4.4 Policy Ownership and Stakeholder Engagement

The success of Daejeon's Digital Ambassadors Policy hinges on a clear delineation of responsibilities and active collaboration among various stakeholders. Identifying a policy owner who will spearhead the implementation, as well as enlisting the support of key entities, is crucial to ensuring the policy achieves its intended objectives.

Potential Policy Owner

• DJBEA(Business and Employment Agency of Daejeon)

Given the policy's focus on enhancing Daejeon's innovation ecosystem, promoting local businesses, and fostering global connectivity, the Business and Employment Agency of Daejeon emerges as the natural policy owner. This agency possesses the requisite expertise, resources, and network to effectively implement the Digital Ambassadors Policy, performing among others, the following tasks.

1. Coordination and Oversight
2. Resource Allocation
3. Stakeholder Engagement
4. Monitoring and Evaluation

Supportive Stakeholders

- **The Planning and Coordination Office**

The Planning and Coordination Office plays a vital role in aligning the Digital Ambassadors Policy with broader city planning and development goals, performing among others, the following functions.

1. Strategic Alignment
2. Policy Integration

- **DISTEP (Daejeon Institute of Science and Technology for Enterprise and People)**

As an entity devoted to the promotion of science and technology enterprises, DISTEP is uniquely positioned to provide invaluable support to the Digital Ambassadors Policy with the following functions.

1. Technical Expertise
2. Network Enhancement

- **Daejeon-based Universities (e.g. KAIST)**

Being one of the world's leading research ecosystems, Daejeon universities can provide academic and research support, contributing to the policy's robustness and effectiveness, mainly due its role as talent developers which makes them the right spot looking for supplying a steady stream of talented individuals who can participate as Digital Ambassadors, enriching the program with diverse skills and perspectives.

The careful selection of a policy owner and the strategic engagement of supportive stakeholders is paramount to the success of Daejeon's Digital Ambassadors Policy. The Business and Employment Agency of Daejeon, with its central role and relevant expertise, is well-suited to take on the responsibility of policy implementation. Meanwhile, the active involvement of the Planning and Coordination Office, DISTEP, and KAIST ensures a multi-faceted and comprehensive approach, tapping into a rich array of resources, knowledge, and networks. Together, these entities create a formidable coalition, poised to propel Daejeon's innovation ecosystem onto the global stage and secure the city's position as a leader in the digital age.

The implementation of the Daejeon Digital Ambassadors Policy is poised to generate significant social and economic benefits for the city, its businesses, and its residents. By leveraging the power of diversity, fostering inclusion, and actively connecting local entities to global opportunities, this policy stands as a catalyst for transformative change.

5.1 Pre-Segmentation Analysis

STEP 1:

For this analysis a database has been meticulously curated by our team through extensive research across multiple websites. Our primary objective is to assimilate information on companies that fit the profile for potential collaboration within the ambassador policy framework. This document encompasses contact details of the companies, their specified business areas, as well as a comprehensive list of services they offer.

For the analysis, we began with an initial pool of over 1,000 companies. Some of these were excluded due to insufficient information or because they did not align with the program's profile. Ultimately, the list was narrowed down to 350 companies spread across diverse sectors and services. During this refinement process, greater emphasis was placed on companies that specified their export areas.

Figure 9. Database on companies that fit the profile for potential collaboration

Company	City	City	website	Area	Service A	Service B	Service C
DolbomDream Co., Ltd.	Daejeon - South Korea	+82 70 44523300	https://en.dolbomdream.com	Industrial design consultants	Aids and articles for the disabled, design	Assistance services for the elderly	DTP Vest_HUGgy
INNOPOULS(Korea)	Daejeon - South Korea	+82 42 865 8800	http://www.innopouls.or.kr/eng	Manufacture & export of Fibre optic cables	Cooling systems	Oil and gas extraction engineering	FLEXIBLE LI-ION BATTERY-5 : Flexible
LIBEST	Daejeon - South Korea	+82 42 867 0119	https://www.libest.co	Accumulators, batteries and secondary cells	Electronic information display systems	Components for batteries and	Flexible Lithium Battery-1 (for Watch,
Dawon Company Co.,	Daejeon - South Korea	+82 42 285 1096	https://www.em.bambianc.co.kr	Manufacture & Export of Clothes for babies	Underwear and nightwear for babies	Footwear, standard...	Baby Coverall
NON Corporation	Daejeon - South Korea	+82 42 823 7820	https://www.drco.com/en/	Manufacture & export of Cleaning products and detergents,	Cleaning and washing machines and	Disinfectants, indoor use...	Dr.Clo Sanitizing stick for Household
Hankook Electric Power	Daejeon - South Korea	+82 42 861 2400	https://hepi.co.kr	Ultraviolet (UV) equipment	Ultraviolet (UV) equipment for sunlight	Renewable energy consultants...	Weather IOT Environment Sensor
E&S Healthcare Co., Ltd.	Daejeon - South Korea	+82 70 8807 9081	http://ens-	Pharmaceutical preparations NES	Diagnostic kits, medical, biochemical	Test kits, drugs in body fluids...	DxMe® BC
East Photonics	Daejeon - South Korea	+82 42 933 2346	https://www.eastphotonics.com/index	Plastic products for the optical, photographic and	Membranes, plastic, protective, for	Optical glass fibre products...	Coexistence(CEx) module
GOOSTECH	Daejeon - South Korea	+82 42 822 9027	https://goostech.co.kr/	Safety equipment for civil engineering and the building	Heating equipment, industrial, electric	Heating equipment, resistance,	Heat resistant double glove TS -
uniplatex	Daejeon - South Korea	+82 42 867 7685	https://WWW.UNIPLATEX.NET	Sheet and film, plastic, by use	Film, plastic, for thermal shields	Heating elements and	Picture Frame heater
B WAVE SYSTEM,LTD	Daejeon - South Korea	+82 42 622 4706	https://bipsa.com	Manufacture & Export of Windows, plastic	Windows, plastic, insect screen	Window screens...	Pleated Insect Screen
LABZONE CO., LTD.	Daedeok-gu, daejeon -	+82 42 334 4664	https://kompassmall.com/product/air-	air quality management system, air pollution measurement,	Air filtration equipment	Air filtration plants to customer	Hygiene and sterilisation equipment
WIPowerOne (On-Line	Daejeon - South Korea	+82 10 2824 3467	http://www.wipowerone.com/	wirelesscharging, EVcharging, Ewirelesscharging	Battery chargers	Battery chargers, dual voltage	Charging poles for electric vehicles...
SPS Inc.(Smart Power	Daejeon - South Korea	+82 42 936 4905	https://www.sps-lltd.com	Manufacture & Export of wireless charging, wireless charger,	Battery chargers	Battery chargers, automatic control	Electric power supplies...
Small Lab Co.,Ltd.	Daejeon - South Korea	+82 70 5126 6701	http://www.smalllab.co.kr	Manufacture & Export of ELDEEN Age Twenty one Micro	Dermatology equipment	Electro-medical equipment for	Ultrasonic equipment for biological
SEWON CHEMICAL CO.,	Daejeon - South Korea	+82 42 620 6912	https://sewonchem.co.kr/english/index	Manufacture & Export of UPR, FRP Molding, Lamination for	Plastic processing services	Processing services for unsaturated	Laminated plastics...
sung gyung food co.,ltd	Daejeon - South Korea	+82 42 632 8600	https://en.aykim.co.kr/?redirect=no	Manufacture & Export of -Dried laver -Manufacturing dried	Fish, shellfish and seaweed processing	Driers, seaweed	Marine algae and plankton...
Korea Brush Dental Co.,	Daejeon - South Korea	+82 42 472 9272	https://koreabrush.co.kr/?lang=en	Manufacture & Export of interdental brushes, dental floss,	Oral and dental care products	Oral and dental care equipment and	Toothbrushes...
A Mech Co., Ltd.	Daejeon - South Korea	+82 42 867 2611	http://www.amech.co.kr/?page_id=242	Manufacture & Export of Manufacturer & Exporter of:	Metal polishing, honing and lapping	Electro-polishing/electro-	Lapping and polishing machines,
Truwin Company	Daejeon - South Korea	+82 42 612 5000	https://www.truwin.co.kr/en/	Manufacture & Export of Accelerator Pedal Sensor, Throttle	Adhesives, synthetic	Adhesives, synthetic	Saddlery, belts and straps, leather...
Hyojung ONB Co., Ltd.	Daejeon - South Korea	+82 42 624 7613	https://hjonb.com/?language=eng	Manufacture & Export of Hyojung ONB is the leading	Fertilisers, organic carbon based	Fertilisers, blended, organic carbon	Fertilisers, organic carbon based,
KUMHO NEW	Daejeon - South Korea	+82 42 671 7700	http://www.khntc.co.kr/em_index2.php	Manufacture & Export of A Customized Premium Grinding	Grinding and sharpening machines for	Grinding and sharpening machines,	Grinding and sharpening machines for
Namsun Machinery Co.,	Daejeon - South Korea	+82 42 625 5561	https://eng.namsuntool.com/	Manufacture & Export of S-axis Machining Center, Universal	Metal milling machines	Milling machines, toolroom	Milling machines, computer
Whashin Korea Vision	Daejeon - South Korea	+82 42 222 7600		Manufacture & Export of Plastic Optical Lens Manufacture &	Optical lenses	Optical lenses, glass	Optical lenses, plastic...
Opli tech	Daejeon - South Korea	+82 42 523 9486	http://oplittech.co.kr/	Manufacture & Export of Ophthalmic Lenses	Contact lenses	Corrective lenses	
KTC Corporation	Daejeon - South Korea	+82 42 604 5114	https://ktcs.co.kr	Manufacture & Export of Customer Service Provider	Training courses, business, commerce,	Training courses, customer service	Database information services...

* Source: Compiled by authors

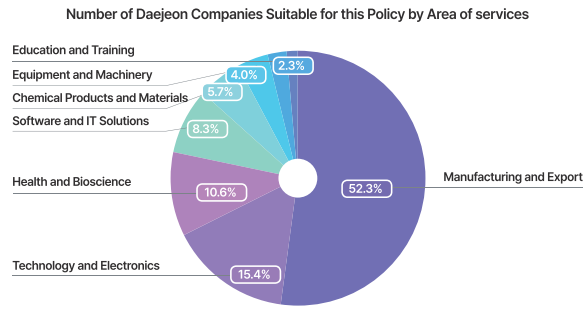
STEP 2:

After reviewing the database, incomplete records were filtered out. The data was then analyzed and categorized by areas to facilitate further analysis.

Figure 10. Categories and Count of Candidate Companies in Daejeon.

AREA	Number of companies
Manufacturing Export	183
Technology and Electronics	54
Health and Bioscience	37
Software and IT Solutions	29
Chemical Products and Materials	20
Equipment and Machinery	14
Education and Training	8
Others	5
Total	350

* Source: Compiled by authors



Insights:

Dominant Sector: 'Machinery and transport equipment' is the top contributor, generating over half the total export revenue, highlighting Daejeon's strong industrial base in this area.

Potential Growth Areas: Sectors like 'Food and live animals' and 'Crude materials' have lower revenue, indicating areas for potential expansion or diversification. Identifying barriers or opportunities in these sectors could be beneficial.

Industrial Dominance: The category with the most companies, 'Miscellaneous Services and Products' (47 companies), aligns with Daejeon's leading export area 'Machinery and transport equipment', which generated \$2,778,226.00. This suggests a robust industrial ecosystem supporting these exports.

Chemicals & Pharmaceuticals Synergy: The 'Medical and Pharmaceutical Products' category is the second largest with 46 companies. This complements the significant export revenue from 'Chemicals and related products', amounting to \$736,029.00.

Technology & Manufacturing Confluence: The prominence of 'Electronic Equipment and Components' (40 companies) is mirrored in the export data by 'Manufactured goods classified chiefly by material' at \$603,873.00, indicating a thriving tech-manufacturing sector.

Diverse Export Portfolio: While 'Beverages and tobacco' isn't a top category by company count, it stands out in export revenue at \$363,840.00. This suggests that even categories with fewer companies can have a significant export impact.

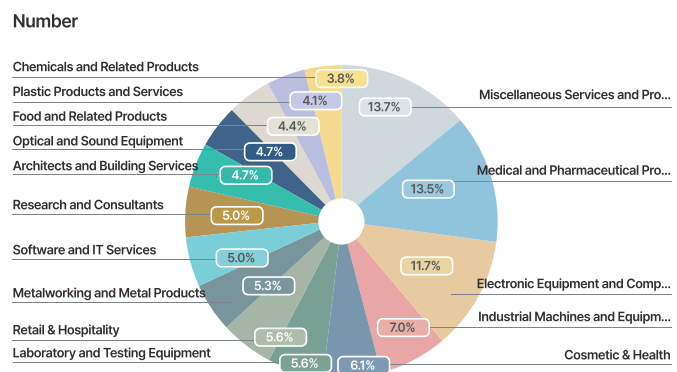
STEP 3:

In light of the observations from the preceding table, where the manufacturing and export sectors are not explicitly detailed, each company was meticulously reviewed and categorized by their respective areas and services. This examination culminated in the subsequent table and graph, which delineate the distribution of companies across various service areas, highlighting those with the highest and lowest representations.

Figure 11. Pre-Segmentation analysis

Companies by Category: Pre-Segmentation analysis in Daejeon (by Daejeon Digital Ambassador Group)	Number
Miscellaneous Services and Products	47
Medical and Pharmaceutical Products	46
Electronic Equipment and Components	40
Industrial Machines and Equipment	24
Cosmetic & Health	21
Laboratory and Testing Equipment	19
Retail & Hospitality	19
Metalworking and Metal Products	18
Software and IT Services	17
Research and Consultants	17
Architects and Building Services	16
Optical and Sound Equipment	16
Food and Related Products	15
Plastic Products and Services	14
Chemicals and Related Products	13

* Source: Compiled by authors



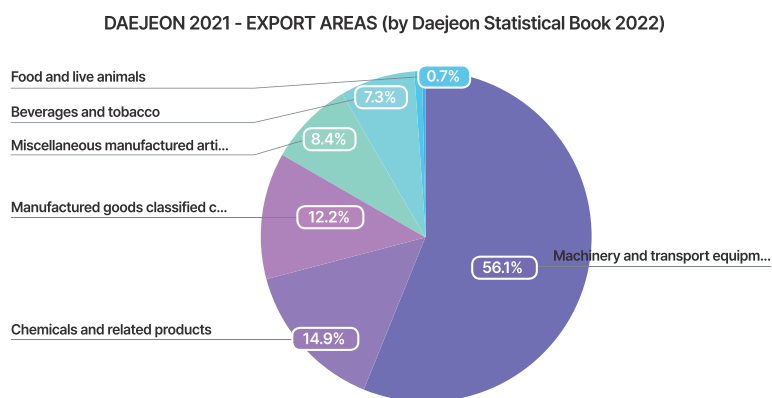
STEP 4:

To compare with official figures, we consulted the Daejeon government to collect the city's export data for the year 2021. The aim of this analysis was to identify sectors with the highest export volumes, as well as those with significant growth opportunities. This would enable a comparative study between the 350 companies we identified as potential candidates and the overall export numbers from the city.

Figure 12. Daejeon Export Areas numbers

DAEJEON 2021 - EXPORT AREAS (by Daejeon Statistical Book 2022)	Unit in thousands of dollars
Machinery and transport equipment	\$2,778,226.00
Chemicals and related products	\$736,029.00
Manufactured goods classified chiefly by material	\$603,873.00
Miscellaneous manufactured articles	\$415,360.00
Beverages and tobacco	\$363,840.00
Food and live animals	\$32,906.00
Crude materials, inedible, except fuels	\$12,037.00
Commodities and transactions n.e.c	\$10,112.00
Mineral fuels, lubricants and related materials	\$271.00
Animal and vegetable oils, fats and waxes	\$14.00
Total	\$4,952,668.00

* Source: Compiled by authors



STEP 5:

Following an in-depth analysis of the service areas of the companies sourced from our database and juxtaposing them with the official figures provided by the city's government, we have distilled a set of recommendations and discerned pivotal findings. These insights facilitate an understanding of the successful sectors and potential opportunities pertaining to the proposed policy. Moreover, they shape the profile and roles of the ambassadors to be engaged, ensuring alignment with the needs of the companies to amplify their exports and market presence internationally.

Table 4. Insights & Recommendations

Strategy	Sector/Category	Action & Rationale
Target Core Strengths	Miscellaneous Services and Products & Machinery and transport equipment	Prioritize these sectors due to their dominant presence and high export value. Benefit from the expertise and network of foreign professionals.
Leverage Pharma Expertise	Chemicals & Pharmaceuticals	Engage professionals with relevant backgrounds. There's potential to tap into global pharmaceutical markets given the synergy between the number of companies and export revenue.
Tech Integration	Electronic Equipment and Components	Integrate tech-savvy professionals. This sector can benefit from external technological perspectives and global market insights.
Diversify Product Outreach	Beverages and tobacco	Despite a lower company count, its significant export impact suggests potential. Engage professionals with expertise in international marketing and distribution.
Expansion Opportunities	Food and Related Products & Plastic Products and Services	View these sectors as growth areas. Professionals with experience in global supply chains and international sales can help these sectors leverage their base for increased exports.

* Source: Compiled by authors

FINAL STEP:

Example Scenario - 30 Ambassadors

Following is a proposed scenario considering the inclusion of 30 ambassadors who might be invited to collaborate. These ambassadors would hail from various universities in Daejeon that offer postgraduate programs and have foreign students willing to contribute under the auspices of this policy. In the subsequent simulation, we detail how these individuals would be allocated to support both the areas with the highest export volume and those that require more intensive intervention and assistance.

Table 5. Digital Ambassadors Scenario

Sector/Area	Sub-Category	Specialists Required	Primary Focus
Allocation High-Gain Export Areas			
Machinery & Transport	Misc. Services & Products	8	Export strategies, market identification, efficiency
Chemicals	Medical & Pharma Products	7	R&D enhancement, regulatory compliance, market expansion
Diversify Product Outreach	Electronic Equipment	6	Product innovation, quality, partnerships
Allocation in Areas with Growth Potential			
Food & Live Animals	Food Products	3	Product diversification, quality standards, new markets
Crude Materials	Metalworking & Metals	2	Efficiency, sustainable sourcing, product diversification
Mineral Fuels & Lubricants	Software & IT	2	Digital transformation, energy research, market diversification
Animal/Vegetable Oils	Cosmetic & Health	2	Product innovation, sustainable sourcing, market expansion
Total	-	30	-

* Source: Compiled by authors

5.2 Economic Expectations and Benefits

Fostering an Inclusive Culture

The engagement of foreign students and researchers as digital ambassadors directly contributes to the creation of an inclusive cultural environment. According to Deloitte's 2018 report, 83% of millennials are actively engaged when they feel part of an inclusive culture. This increased engagement is vital for innovation and contributes to the creation of a vibrant, dynamic community within Daejeon.

Enhancing Cultural Competency

By bringing together local and international talents, the policy fosters an environment where diverse cultures are understood and respected. This is crucial in avoiding the 29% loss in business opportunities that companies face due to cultural misunderstandings, as reported by the British Council in 2013.

Establishing Inclusion & Diversity Standards

The policy paves the way for the development of inclusion and diversity standards in Korea, setting a benchmark for other cities and regions to follow, and contributing to the national agenda of fostering a more inclusive society.

5.3 Social Expectations and Benefits

Boosting Local Business Performance

Embracing diversity has proven economic advantages. McKinsey & Company's 2015 report highlighted that diverse companies are 35% more likely to outperform their peers. The Digital Ambassadors Policy, by connecting local companies with diverse talents, directly contributes to enhancing their competitiveness and performance.

Expanding Export Opportunities

Companies that adapt their products to local needs can increase their export sales by up to 200%, according to Harvard Business Review. The policy, through its business intelligence registry and the establishment of new partnerships, facilitates this adaptation, aiming for a 30% increase in the export share of Daejeon companies and introducing at least five companies per year to new foreign markets.

Job Creation and Economic Growth

Drawing from the Chicago policy experience with immigrants supporting businesses, Daejeon can expect to see a significant economic boost. Doubling exports, creating 20,000 new jobs, and having businesses that are 60% more likely to export are tangible benefits that illustrate the economic potential of this policy.

The Daejeon Digital Ambassadors Policy stands as a beacon of innovation, inclusion, and economic prosperity. By harnessing the power of diversity and fostering a globally connected ecosystem, the policy is set to generate substantial social and economic benefits, propelling Daejeon into a future marked by growth, inclusivity, and global connectivity. This comprehensive approach not only benefits the local community and businesses but also contributes to setting new standards of inclusion and diversity across Korea, paving the way for a more inclusive, competitive, and prosperous society.

5.4 Conclusion

The presented policy project has meticulously analyzed and crafted a comprehensive strategy with the Digital

Ambassadors Policy, aiming to transform Daejeon into a global hub for innovation, inclusivity, and economic prosperity. By capitalizing on the city's existing strengths in research & development and integrating a diverse pool of foreign students and researchers, we are poised to create a vibrant, interconnected ecosystem that propels Daejeon onto the world stage.

The policy's alignment with international and domestic trends underscores its relevance and timeliness. Drawing inspiration from successful initiatives in cities like Toronto, Berlin, and Chicago, we have tailored our approach to Daejeon's unique context, ensuring that it addresses local needs while also positioning the city as a competitive player in the global market. Our benchmark analysis and adherence to the OECD's Digital Government Policy Framework dimensions further validate the policy's robustness, providing a solid foundation for its successful implementation.

A pivotal aspect of this policy is its contribution to the United Nations Sustainable Development Goals (SDGs) 8, 9, and 10, which focus on decent work and economic growth, industry, innovation, and infrastructure, and reduced inequalities, respectively. By fostering an inclusive environment that actively involves foreign talents in the local innovation ecosystem, we are directly contributing to economic growth and promoting equal opportunities. The emphasis on utilizing digital platforms and data-driven strategies aligns with the goal of building resilient infrastructure and fostering innovation.

The DDA Policy stands as a strategic, innovative, and inclusive initiative that promises to yield substantial social and economic benefits. It positions Daejeon as a leader in harnessing the power of diversity for economic prosperity, setting a precedent for other cities to follow. As we look to the future, this policy lays the groundwork for a more connected, inclusive, and prosperous Daejeon, solidifying the city's reputation as Korea's premier innovation cluster and a global scientific hub.

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Global Urban Innovation

Policy Proposal for Daejeon

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DEVELOPING
SUSTAINABLE
CITIES



PART 2.

Daejeon Innovative Scholars



| Proposed by |

Ravi Shankar Pandit

KDI School of Public Policy and Management

Ingyin Khin

KDI School of Public Policy and Management

1.1 Background and Importance of the Initiative

The Initiative – Daejeon Innovative Scholars:

Based on the group members' personal experiences in navigating their own startups in Daejeon, an innovative approach is needed to foster global technology companies and activate the startup ecosystem. We introduce the Daejeon Innovative Scholars Program (DiS) - an innovative pilot project that builds on existing policies (primarily the E-3 researcher visa) to increase foreign participation in startups, and provides an easy and simple pathway for early-stage entrepreneurs and those looking to scale their business to quickly relocate to (or enter) Daejeon and receive maximum support from the city government. This includes (but is not limited to) collaboration with research institutions, social integration support (i.e. Korean language programs), funding, office space, and networking opportunities with local media and businesses. In addition, this program will be implemented autonomously by the Daejeon Metropolitan Government (in association with DiSTEP & Konnect) and does not require any approval from the national government as it is in line with the national government's policies.



Purpose of DiS:

To empower aspiring entrepreneurs from around the world to transform their innovative ideas into thriving businesses in Daejeon, fostering a vibrant and diverse startup ecosystem that drives economic growth, technological advancement, and cultural exchange.

Vision of DiS:

We envision a future where Daejeon stands as a global hub for innovation, celebrated for its unwavering commitment to nurturing diverse talent and groundbreaking ideas. Through the Daejeon Innovative Scholars Program (DiS), we strive to create an inclusive environment where entrepreneurs, regardless of their origin, are

welcomed with open arms. We aspire to cultivate a collaborative community where creativity knows no boundaries, fostering a rich tapestry of startups that not only revolutionize industries but also create a lasting impact on society.

Background:

The presence of foreign entrepreneurs in Daejeon, as in many other cities around the world, reflects the globalized nature of business and innovation. Daejeon, being a prominent technology and research hub in South Korea, has recognized the importance of attracting foreign entrepreneurs for several compelling reasons:

- 1. Diverse Perspectives:** Foreign entrepreneurs bring with them diverse cultural backgrounds, experiences, and perspectives. This diversity can lead to innovative solutions and approaches to problems that might not have been considered within the local context.
- 2. Global Networking:** Foreign entrepreneurs often have established networks and connections in their home countries and beyond. These networks can be invaluable for local startups looking to expand internationally, access global markets, or collaborate on international projects.
- 3. Skills and Expertise:** Foreign entrepreneurs may possess specialized skills and expertise that are not readily available in the local talent pool. They can contribute to filling skill gaps in areas such as technology, marketing, and international business development.
- 4. Cultural Exchange:** The presence of foreign entrepreneurs fosters cultural exchange and understanding. This can lead to increased tolerance, openness, and international cooperation, which are beneficial for a city's global image and relations.
- 5. Job Creation:** Foreign entrepreneurs who establish businesses in Daejeon can contribute to job creation, which is important for the local economy. As their businesses grow, they may hire local talent, stimulating employment opportunities.

Importance:

The importance of having foreign entrepreneurs in Daejeon can be understood from various perspectives:

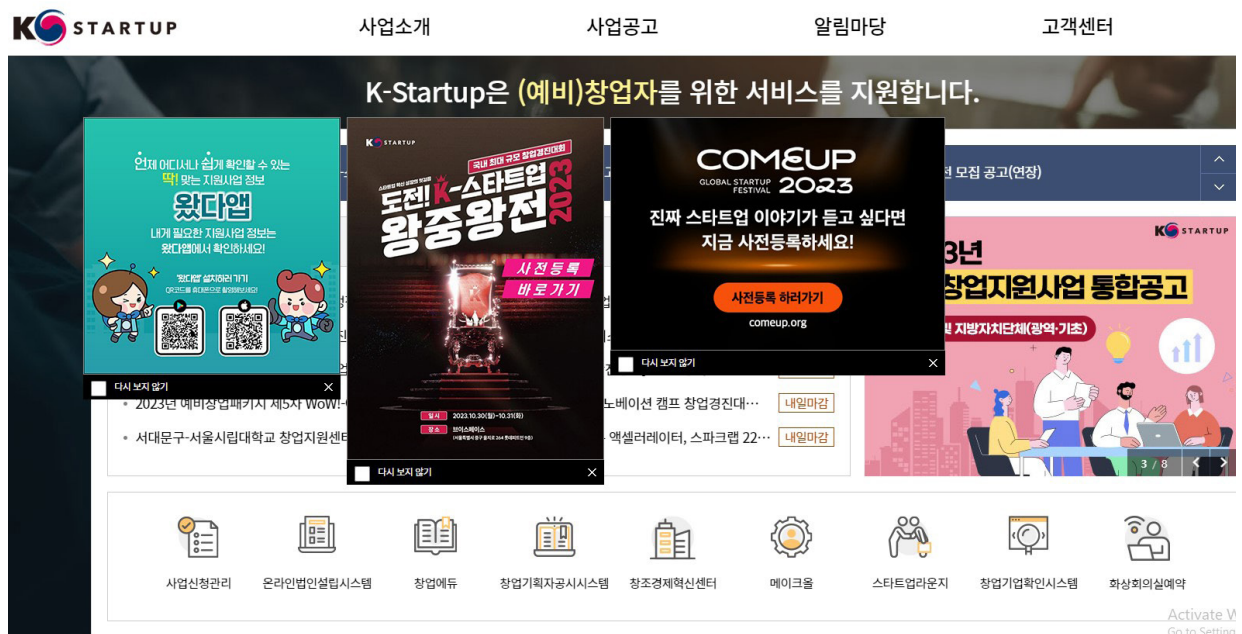
- 1. Economic Growth:** Foreign entrepreneurs can inject new ideas and investments into the local economy. Their businesses contribute to economic growth through job creation, increased consumption, and tax revenues.
- 2. Increase in Population Size:** Daejeon and Korea have the lowest birth rate in the world. Bringing in foreigners may alleviate this issue to a degree.
- 3. Innovation:** The collaboration between local and foreign entrepreneurs can lead to innovative products and services. Daejeon's tech ecosystem can benefit from cross-pollination of ideas and technologies from around the world.
- 4. Global Competitiveness:** As Daejeon aims to position itself as a global technology and innovation hub, having foreign entrepreneurs helps the city compete on the international stage. It enhances the city's reputation and attractiveness to investors and partners globally.
- 5. Cultural Exchange:** The presence of foreign entrepreneurs promotes cultural exchange and international understanding. This cultural diversity enriches the city's social fabric and can lead to increased cultural awareness and tolerance.
- 6. Networking Opportunities:** Foreign entrepreneurs often have access to international business networks and markets. Collaborating with them can open new business opportunities for local startups and organizations.
- 7. Knowledge Transfer:** Foreign entrepreneurs can share their knowledge and experiences with local counterparts, helping to bridge knowledge gaps and raise the overall entrepreneurial and business acumen in the region.

In conclusion, foreign entrepreneurs play a vital role in contributing to the growth, innovation, and global competitiveness of Daejeon. Their presence brings diversity, fresh perspectives, and opportunities for economic and cultural exchange, ultimately benefiting the city's ecosystem and its position in the global business landscape. As such, fostering an environment that is welcoming to foreign entrepreneurs can be a strategic advantage for Daejeon's continued development as a technology and innovation hub.

1.2 Current Local Issues and Status in Daejeon City

Since 2023, Daejeon has lost 77 spots in the Global Startup Ecosystem Index, having now positioned itself as 498th worldwide. At the same time, Seoul (24th), Incheon (406th), and Busan (444th) are ranked higher than Daejeon. Moreover, and surprisingly, South Korea now has only one city among the global top 400 versus two cities (Seoul & Busan) among the global top 250 last year, indicating a higher level of centralization in the country's startup scene. This data also showcases the ease of doing business in other regions of Korea (versus Daejeon) and other foreign countries. Hence, if Daejeon is to become a hub for foreign entrepreneurs, it must understand the existing complexities that prohibit foreigners from starting a company and create a system (or reflect successful models from other leading countries) that invites foreign participants to conduct business in Daejeon with ease.

Currently, Daejeon City is regarded as Asia's Silicon Valley and is home to 187 official colleges and universities. Roughly 8000 international students' study in these universities (6.5% of the entire student population). Moreover, approximately 22,000 foreign residents (roughly 2% of entire population) reside in Daejeon. However, there are various barriers to entry for foreign talent:





1. Almost every website that caters to entrepreneurship exists only in Korean (for example, CCEI, KISED, & K-Startup - images below). Even when certain parts of the website are in English, for all administrative purposes, all documents are in Korean (or even required to be submitted in Korean).
2. There is no dedicated website by Daejeon City that offers a one-stop service (website / mobile app) where all startup information is presented together. For example, VC firms, startup programs, funding resources, language centres, and so on.
3. For a foreigner to start a company in Korea, they need to obtain a D-8 visa. To secure the required points of the visa (80 points) may take roughly 1-2 years. This is far too long. Secondly, the OASIS program is not offered on a rolling basis (offered only 1-2 times a year). And causes significant delays and stressful moments. Lastly, this visa is based on annual renewal.
4. More importantly, for foreigners residing outside of Korea, the OASIS program is not offered. And the only way to start a company is to have approximately \$100,000 in your bank account. This eliminates most early-entrepreneurs from entering Daejeon and Korea.
5. Even after securing the D-8 visa, there is very little support given by the Daejeon Government in terms of offering office space, funding, and networking opportunities. A key reason for this may be the lack of a dedicated website and improper policies from leading startup organizations in Daejeon. Moreover, the opportunities to apply for funding or office space are not on rolling basis.
6. An early entrepreneur often has various limitations in terms of resources and funding. Under the D-8 visa, the entrepreneur is not allowed to work or study.
7. Currently, the visa does not allow family members to enter. They must apply separately. This often ends up becoming a tedious process.
8. Currently, the D-8 visa does not lead to a path of permanent residency.

2.1 International Policy Trends

Progressive nations have acknowledged the significance of enticing international talent and have implemented startup visa initiatives to streamline the legal procedures. These temporary residency schemes, commonly known as "entrepreneur visas," vary in terms of application terms, conditions, and prerequisites. According to Astons, a prominent global immigration solutions provider, the subsequent programs stand out as the leaders in the realm of entrepreneur visas.

(1) Canada Start-up Visa Program

The Canada Start-Up Visa Program is designed to attract entrepreneurs from around the world to tap into Canada's thriving technology and innovation landscape, promoting economic growth and diversity. This program is open to applicants from all provinces and territories except Quebec.

To be eligible for Canada's Start-Up Visa Program, you must meet the following criteria:

1. Present an innovative business idea that will generate employment opportunities for Canadians and can compete on a global scale.
2. Demonstrate sufficient proficiency in the required language.
3. Pitch your business idea to a designated organization that will provide a letter of support, including a Commitment Certificate.
4. Prove that you have enough financial resources to support yourself and your family (if applicable) in Canada for 52 weeks. You are not required to invest your own money; the minimum required investment will come from a designated Canadian venture capital fund or angel investor group.

Successful applicants, along with their immediate family members, can obtain permanent residency in Canada. Additionally, applicants can work in Canada on a temporary basis while their permanent residency application is being processed.

(2) Australia's Business Innovation and Investment Visa

Australia's Business Innovation and Investment Visa is tailored for individuals with a track record of successfully managing businesses and who aspire to establish, foster, and expand innovative enterprises in Australia.

To qualify for this visa, applicants must satisfy specific minimum prerequisites, which include:

1. Demonstrating that their proposed business venture or investment will contribute positively to the Australian economy.
2. Attaining a minimum score of 65 points on the Australian Government's points test.
3. Possessing a minimum of three years of business experience.
4. Displaying the ability for innovation.

In addition to these criteria, applicants need to be nominated by an Australian organization to commence the application process.

This visa allows applicants and their immediate families to reside in and work in Australia for up to five years, providing them access to top-notch education and one of the world's finest healthcare systems. After three years, applicants become eligible to apply for permanent residency.

(3) Singapore's Entrepass

The EntrePass work visa in Singapore is specifically designed for foreign entrepreneurs who are either in the process of planning or have already initiated businesses that are either venture-backed or possess innovative technologies.

To be eligible for the EntrePass, applicants must provide a comprehensive business plan that demonstrates innovation, the potential to create jobs, and a positive impact on the local economy. Approved applicants receive a two-year visa, which can be extended as long as the business remains viable.

The EntrePass offers various benefits, including the option to bring in family members and access government support and grants for business development. Additionally, EntrePass holders have the flexibility to work for their own company without the need for a separate work permit, streamlining business operations.

Singapore also provides a conducive business environment characterized by low taxes, robust infrastructure, and a robust legal framework, making it an appealing destination for foreign entrepreneurs seeking to expand their businesses.

(4) Britain's New Innovator Founder Visa Program

The British government has recently unveiled the Innovator Founder Visa, which supersedes previous programs such as the Innovator Visa and Start-up Visa. This new visa option offers greater flexibility to aspiring entrepreneurs.

To be eligible, applicants must possess a distinctive business concept endorsed by an approved entity. Additionally, they must demonstrate sufficient funding to the endorsing body, unless the business is already established and endorsed for a previous visa or if it has undergone a change approved by the endorsing body.

Applicants must meet the English language proficiency requirement, be at least 18 years old, and prove that they possess adequate personal funds to sustain themselves while in the UK.

The minimum requirement is £1270, with an additional £285 for a dependent partner, £315 for the first child, and £200 for each subsequent child.

Furthermore, applicants may engage in work outside of their business, provided it qualifies as 'skilled work.' The Innovator Founder Visa paves the way for permanent residency after three years, known as indefinite leave to remain. This status grants access to public funds, free healthcare, and serves as a pathway to citizenship, offering holders the opportunity to bring their family to the UK.

(5) The Netherlands' Start-up Visa

The Netherlands' Start-up Visa is a residence permit that grants foreign entrepreneurs the opportunity to initiate and manage an innovative business within the Netherlands.

To meet the eligibility criteria, applicants must possess a business concept that has the potential for scalability and addresses a specific need within the Dutch market. They must also be backed by a recognized facilitator, which could be a start-up accelerator, incubator, or university. Furthermore, applicants are required to demonstrate that they have a minimum of €13,000 at their disposal to support themselves.

The visa allows entrepreneurs to stay in the Netherlands for an initial period of one year, with the option of extending it for an additional two years. The Netherlands Start-up Visa also affords entrepreneurs the flexibility to bring their family members to the Netherlands and permits them to work on their start-up without any employment restrictions.

Moreover, this program provides access to a valuable network of business advisors, mentors, and potential investors who can offer assistance in business development and help in identifying funding opportunities.

Global Trends						Why is South Korea lagging behind?
START-UP VISAS	PROCESS	ROUTE TO PR	FINANCIAL REQ.	WORK/STUDY	FAMILY	GOVT. SUPPORT
CANADA	BUSINESS PLAN LETTER OF SUPPORT	IMMEDIATE	NO	YES	YES	YES
UK	BUSINESS PLAN- LETTER OF SUPPORT	3 YEARS	NO	YES	YES	YES
SINGAPORE	BUSINESS PLAN ENTREPASS VISA	INDERINITE RIGHT TO LEAVE	NO	YES	YES	YES
AUSTRALIA	BUSINESS PLAN AUS.ORG. NOMINEE	3 YEARS	NO	YES	YES	YES
NETHERLANDS	BUSINESS PLAN NETH.ORG. NOMINEE	IMMEDIATE	NO	YES	YES	YES
SOUTH KOREA	DEVISA-ASIS	NA	\$100,000 2 YEARS	NO	NO	NO

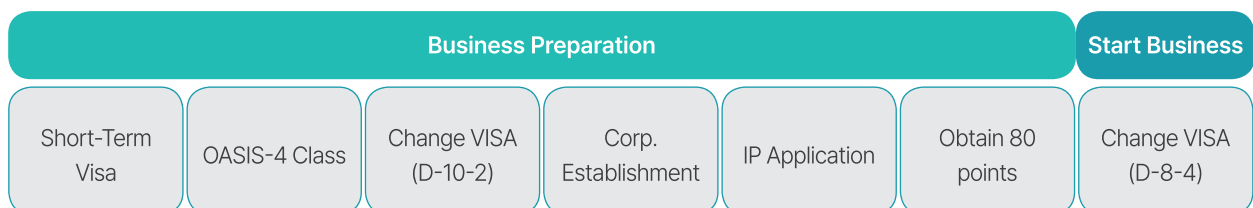
2.2 Domestic Policy Trends

The Role of Ministry of Justice:

Currently in South Korea, all laws and policies relating to foreigners are enacted at the national level by the Ministry of Justice. Furthermore, the only law that encourages foreign startups is known as D-8 visa via the OASIS program. Hence, we shall outline the D-8 Visa below. It is important to note that this visa is not viable nor sustainable solution. Hence, we need to create solutions at the local level i.e., Daejeon City. In addition, we shall also look at the following three laws (Act On Treatment Of Foreigners Residing In The Republic Of Korea; Local Autonomy Act; Act on the Employment of Foreign Workers) that relate to foreigners and shall help us in preparing solutions to increase foreign startup participation.

Start-up Visa (D-8): The Overall Assistance for Start-up Immigration System (OASIS) is a program operated by the Global Startup Immigration Center (KIPA & KPC) and designated by the Minister of Justice and the Minister of Small and Medium Venture Businesses. The D-8-4 Technology and Business Start-up visa is issued to founders of a corporation involved in a technology-based business and for those who have a bachelor's degree and intellectual property rights or equivalent skills. It can be issued for up to 12 months and extended while running your business. The D-8-4 visa is available to OASIS participants only. The applicant needs to obtain 80 points to be eligible.

* Visa Acquisition Flow



New issuance of Start-up visa

Requirements

Bachelor's degree or associate's degree (only in Korea) or Global Start-up Immigration Center Letter +80 points* (at least one required item should be included) + Corporation establishment

Table of OASIS Points

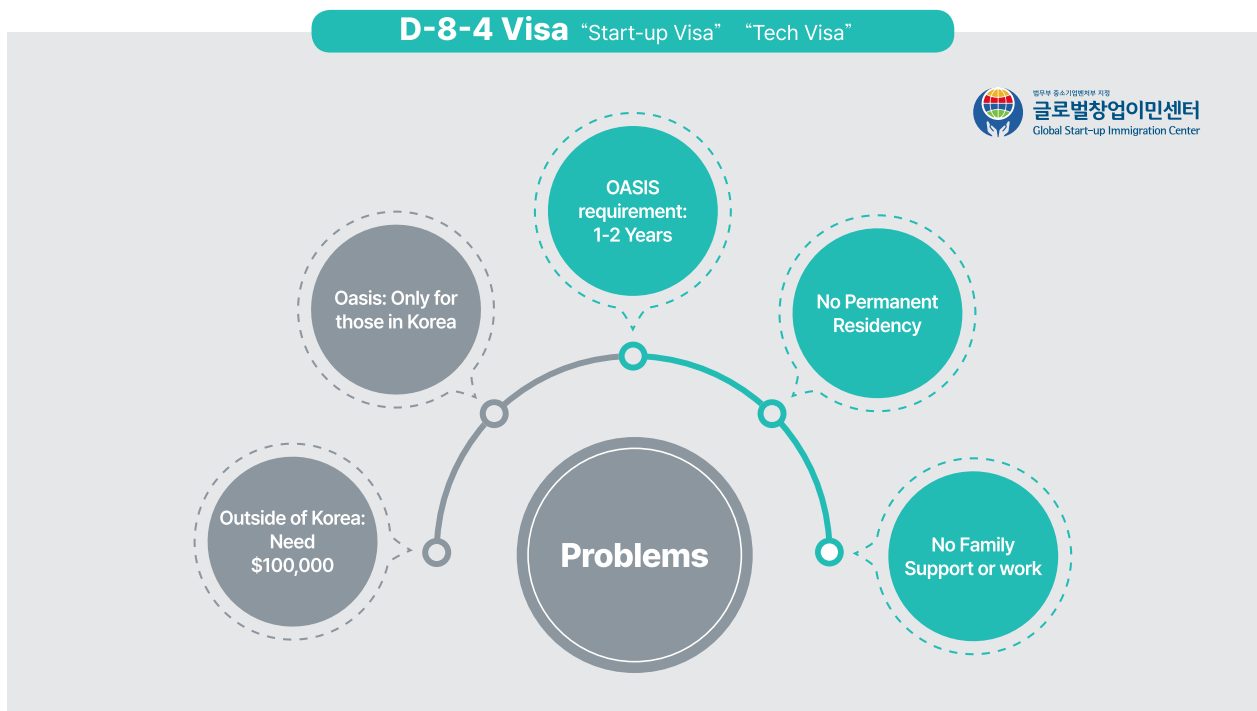
A. Prerequisite Items and Points (313 points): At least one item is required.

Items	IP Ownership (Registration)		IP Application		Co-inventor of Registered IP Rights		At least three years stay on E-3 visa (Researcher)	OASIS-6, OASIS-9	Investment 100M KRW
Points	80	50	20	10	5	3	15	25 (each)	80

B. Elective Items and Points (135 Points)

Items	OASIS-2, OASIS-4	OASIS-1, OASIS-5, OASIS-7	Education Background		TOPIK Level 3+ or Completion of KIIP	Establishment of a Company
			Doctoral Degree	Bachelor's or Master's Degree from a Korean University		
Points	25 (each)	15 (each)	10	5	10	15

However as above mentioned, the D-8 visa is not a viable pathway to encourage sustained foreign participation.



However as above mentioned, the D-8 visa is not a viable pathway to encourage sustained foreign participation.

Chapter I: General Provisions

This chapter outlines the purpose of the Act, which is to establish guidelines for the treatment of foreigners residing in the Republic of Korea. The aim is to help foreigners adjust to Korean society, utilize their abilities, and promote mutual understanding between Koreans and foreigners, thereby contributing to the development and integration of Korea.

Chapter II: Establishment and Implementation of Policies for Foreigners

This chapter details the establishment of basic plans for policies on foreigners by the Minister of Justice, outlining objectives, methods, funding, and necessary matters. It also emphasizes the coordination between central and local administrative agencies and the evaluation of implementation plans.

Chapter III: Treatment of Foreigners in Korea

This chapter focuses on safeguarding the human rights of foreigners, supporting their social adjustment, and providing assistance to immigrants by marriage and their children. It also addresses the treatment of permanent residents, refugees, and foreigners who acquire Korean nationality. The chapter emphasizes policies to attract skilled foreign workers and outlines the treatment of individuals who formerly held Korean nationality or their descendants.

Chapter IV: Creating a Harmonious Society

This chapter emphasizes the promotion of cultural diversity understanding, aiming for mutual respect between Koreans and foreigners. It designates 'Together Day' on May 20th, encouraging activities fostering cultural exchange and harmony during 'Together Week.'

In summary, the Act establishes a comprehensive framework for the treatment of foreigners in Korea, outlining their rights, support mechanisms, and integration initiatives while promoting mutual understanding and respect between Koreans and foreigners residing in Korea.

Local Autonomy Act: The South Korean Local Autonomy Act, enacted in 1947 and revised multiple times since, outlines the framework for local governance and autonomy in the country. Here are the salient features of the Act:

- 1. Local Autonomy:** The Act establishes the principle of local autonomy, granting local governments the authority to manage their own affairs independently within the boundaries of the law.
- 2. Local Governments:** It defines the structure and functions of local governments, which include provincial governments, metropolitan cities, cities, counties, and districts, each with varying degrees of administrative power.
- 3. Local Councils:** The Act establishes local councils for each level of local government, providing a mechanism for democratic representation and decision-making at the local level.
- 4. Powers and Responsibilities:** It outlines the powers and responsibilities of local governments, specifying areas such as education, public health, welfare, transportation, and urban planning, among others.
- 5. Financial Autonomy:** The Act defines the financial autonomy of local governments, including the authority to impose and collect taxes, receive grants from the central government, and manage their budgets independently.
- 6. Elections:** It establishes the procedures for local elections, ensuring that local leaders and council members are elected through a democratic process.
- 7. Administrative Support:** The Act stipulates the provision of administrative support and supervision from the central government to local governments, ensuring a balance between local autonomy and national interests.
- 8. Citizen Participation:** It encourages citizen participation in local governance through mechanisms such as public hearings,

advisory councils, and other forms of community engagement.

9. Coordination between Levels: The Act outlines the mechanisms for coordination and cooperation between different levels of local government and between local and central authorities.

10. Amendments: The Act has been subject to amendments over the years, reflecting changing social, economic, and political needs in South Korea.

Overall, the South Korean Local Autonomy Act establishes the legal foundation for decentralized governance, enabling local authorities to address the unique needs and challenges of their communities while operating within the framework of national laws and regulations. In the past, several provinces have used this law to help grow their city. For example, to address shortages in the manufacturing, construction, service, agricultural and livestock, and fisheries industry, several provinces (by way of E-9 visa) have hired foreign workers to fulfill the local need (table below). In fact, in January of 2023, the national government created a new visa (F-4) to fulfill labor shortages in the region of North Chungcheong Province (article below).

Distribution of Introduced Workers by Sojourn Status and Industry

2022

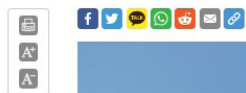
Classification	Number of Workers	Manufacturing	Construction	Service	Agricultural and Livestock Industry	Fisheries
General (E-9)	35,530	24,280	2,390	90	5,580	3,190
Committed Workers	23,470	20,220	10	10	2,420	810
Total	59,000	44,500	2,400	100	8,000	4,000

National

Politics Foreign Affairs Multicultural Community Defense Environment & Animals Law & Crime Society Health & Science



Foreigners flock to North Chungcheong Province with new work visa



North Chungcheong Provincial Government Office in Cheongju / Courtesy of North Chungcheong Provincial Government

By Ko Dong-hwan

Foreign migrants flocked to North Chungcheong Province faster than anticipated this year following the immigration authorities' policies to promote immigration, especially in regions with dwindling populations.

The signs of an increase were found in Jecheon City and Danyang County, regions subject to the central government's pilot project, which started at the beginning of this year.



Act on the Employment of Foreign Workers: The purpose of this Act is to contribute to smooth supply of and demand for human resources and the balanced development of the national economy through the systematic introduction and management of foreign workers. The summary of this Act follows:

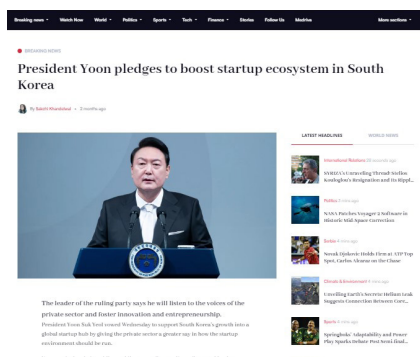
- 1. Employment Types:** The Act distinguishes between different types of employment for foreign workers, such as Employment (E) visa for professionals (E-3 for researchers), and Non-Professional Employment (E-9) visa for workers engaged in manual, low-skilled, or simple labor jobs.
- 2. Employment Period:** Foreign workers are usually granted employment contracts for a specific duration, often corresponding with the length of their visa. Extensions or renewals are typically possible based on employer requirements and government regulations.
- 3. Employer Responsibility:** Employers hiring foreign workers are responsible for their legal status, including obtaining the necessary work permits and visas. They must adhere to labor laws and provide safe working conditions.
- 4. Labor Rights:** Foreign workers are entitled to basic labor rights, including minimum wage, working hours, and safety standards. Employers are obligated to treat them fairly and equally, similar to Korean workers.
- 5. Support Services:** The South Korean government often provides support services to help foreign workers integrate into Korean society, including language training and cultural orientation programs.
- 6. Social Insurance:** Foreign workers are often required to participate in social insurance programs, which may include health insurance and pension schemes, to ensure their well-being during their employment.
- 7. Regulated Recruitment:** There are regulations concerning the recruitment of foreign workers. Private recruitment agencies must be licensed and adhere to ethical standards. Illegal recruitment practices are penalized.
- 8. Deportation:** Foreign workers who violate the terms of their visa, engage in illegal activities, or overstay their visa validity may face deportation and other legal consequences.

The Call from President Yoon

The Ministry of Small and Medium-sized Enterprises and Startups (hereinafter referred to as MSS) under the Yoon Administration has introduced "Startup Korea," a comprehensive policy aimed at providing mid- and long-term support to startups.

Minister Lee Young emphasized that previous government initiatives have led to increased dynamism in the South Korean startup ecosystem. Nonetheless, the evolving landscape, marked by digitalization, the AI revolution, and other transformative changes, necessitates a fresh approach.

The core strategies of "Startup Korea" are detailed below.



Beyond Boundaries: MSS will globalize Korea's startup ecosystem and improve connectivity between Korean startups and the world.

The South Korean government has set its sights on fostering an inclusive startup ecosystem within the country, one that warmly embraces skilled talents from around the world who wish to establish their businesses. To achieve this, there are plans to overhaul the immigration system, making it more conducive for startups. This restructured system will ease the process for foreign entrepreneurs to settle in South Korea and collaborate with local startups.

For industries facing a high demand for startup talent, there may be more lenient visa requirements, particularly for the E-7 visa category, designed for Foreign Nationals of Special Ability. Additionally, the Ministry of Small and Medium-sized Enterprises and Startups (MSS) will explore the possibility of offering startup visas and funding for the commercialization of technology-driven foreign startups with viable business plans.

To further support this vision, MSS will launch K-Tech College, a program aimed at providing training in software and job placement opportunities with Korean startups to talented students hailing from developing nations, including Vietnam. Drawing inspiration from the UK's Global Entrepreneur Programme (GEP), MSS plans to introduce the K-Scouter program to identify and nurture startups with high potential for entering the Korean or broader Asian markets. Furthermore, a Space-K initiative will be established in the greater Seoul area, facilitating communication and collaboration among young entrepreneurs worldwide.

In parallel, assistance will be extended to Korean entrepreneurs who initiate businesses overseas, with support available to those who have made significant contributions to the Korean economy, provided they meet the necessary eligibility criteria.

In a significant move, the government aims to raise global funds totaling approximately KRW 10 trillion (USD 7.5 billion) by 2024. These funds will serve the dual purpose of attracting foreign investment into South Korean startups and aiding in their global expansion. The establishment of this global fund is geared towards enticing more investors to engage with Korean startups by investing in foreign funds.

Solidarity: MSS plans to encourage private capital involvement in VC investments. It will also introduce new ways of financial support for startups.

The government and the private sector will collaborate in investing in the Startup Korea Fund with the aim of reaching a total of KRW 2 trillion (USD 1.5 billion) by the year 2027. The Startup Korea Fund will be established as a complementary initiative to the existing investment in a fund of funds. This fund will place substantial investments in strategic sectors, particularly deep tech areas like artificial intelligence and semiconductors.

The Ministry of Small and Medium-sized Enterprises and Startups (MSS) is set to introduce novel methods of financial support for startups. While previous support primarily centered on subsidies, the new approach integrates investment and loans. This innovative approach is anticipated to expand the range of options available to companies, all without necessitating additional budget allocations.

Regional Startup, Equal Opportunity + Open Innovation: MSS will boost the regional startup ecosystem and foster open innovation partnerships between startups and large corporations.

MSS intends to establish a positive cycle of regional economic revitalization and equitable regional progress by strengthening the previously marginalized regional startup ecosystem. As part of this endeavor, MSS has plans to create "Provincial Space-K" locations in regions characterized by a concentration of anchor companies, universities, and research institutions, providing conducive environments for young entrepreneurs to settle.

Moreover, there are plans to extend the reach of the Regional Angel Investment Hubs, aimed at promoting early-stage investments in regions outside the capital. These hubs will be expanded to foster investment in areas beyond the major cities.

MSS also intends to enhance collaboration programs between startups and large corporations within the top ten emerging industries, including artificial intelligence and biotechnology.

The "Startup Korea" initiative encompasses tailored policies designed to support various groups, including military personnel, youth, university students, researchers, and serial entrepreneurs, in launching their own businesses.

Minister Lee Young of the Ministry of Small and Medium-sized Enterprises and Startups highlighted the collaborative efforts of several South Korean ministries, including the Ministry of Economy and Finance, the Ministry of Justice, and the Ministry of Science and ICT, in crafting comprehensive measures for "Startup Korea." The ultimate aim is to position South Korea as a leading nation in the startup ecosystem. Minister Lee expressed the goal of increasing the number of Korean K-Startups among the top 100 unicorns globally to five, as currently, only one Korean company holds that distinction according to CB Insights' company valuations. MSS intends to elevate South Korea's ranking in the global startup landscape by fostering increased venture capital investment. The broader aspiration is for South Korea to eventually rank among the top three global startup nations.

3.1 SWOT Analysis (Snapshot)

Silicon Valley of Asia

SWOT
Analysis

<p>Threats</p> <p>Loss of existing foreign talent in Daejeon</p>	<p>Opportunities</p> <p>Universities and Colleges - 187 VC Firms - 165 Daedeok INNOPOLIS - 60% R&D</p>	<p>Strengths</p> <p>Daejeon is regarded as 'Silicon Valley of Asia'</p>
<p>S-T Strategy</p> <p>Currently, 8000 students study in Daejeon. We can mitigate the loss of existing foreign talent in Daejeon by creating DIS which shows the City Government promise to help foreigners.</p>	<p>S-O Strategy</p> <p>We will partner with the 187 universities / colleges and 165 VC Firms present in Daejeon. This may also allow INNOPOLIS to fund innovative foreign startups.</p>	<p>Weaknesses</p> <p>D-8-4 Visa is a time-taking process with many requirements</p>
<p>W-T Strategy</p> <p>Because it takes time for the national government to create new policies, the city of Daejeon can utilize the existing laws to gain traction and stay ahead of the neighbouring provinces - by way of DIS Program.</p>	<p>W-O Strategy</p> <p>We shall utilize the E-3 Researcher Visa stream and activate the local government of Daejeon to provide a simplified gateway for foreign startups to link with research institutions in Daejeon.</p>	

3.2 Detailed SWOT Analysis

	<p>Strengths</p> <p>Innovative Destination: The program positions Daejeon as an innovative and attractive destination for entrepreneurs from around the world.</p> <p>Clear Pathway: It offers a well-defined pathway to entrepreneurship, making it easier for foreign entrepreneurs to establish businesses in Daejeon.</p> <p>Support Networks: Access to local support networks and resources for startups will be a significant advantage.</p> <p>Permanent Residency: Offering a route to permanent residency incentivizes entrepreneurs to commit to the city long-term, contributing to economic stability.</p>	<p>Weaknesses</p> <p>Visa Processing Time: The program needs to address visa processing time to reduce the waiting period for entrepreneurs.</p> <p>Limited Awareness: The lack of awareness about Daejeon as a startup hub and the new visa program may hinder its initial adoption.</p> <p>Language Barrier: Overcoming language barriers, especially with regard to administrative documents, could be challenging.</p> <p>Initial Investment: Entrepreneurs may still face financial requirements that are relatively high for early-stage startups.</p>
<p>Opportunities</p> <p>Economic Growth: The program can drive economic growth by attracting innovative businesses and creating job opportunities.</p> <p>Global Talent Pool: Daejeon can tap into a global pool of entrepreneurial talent, diversifying its startup ecosystem.</p> <p>Cultural Exchange: Encouraging cultural exchange programs can enhance Daejeon's cultural diversity and global integration.</p> <p>Partnerships: Collaborating with universities and industry players can strengthen the support network for entrepreneurs.</p>	<p>Strategy SO</p> <p>Leverage Daejeon's innovative ecosystem and the program's support networks to attract global entrepreneurial talent, thereby driving economic growth.</p> <p>Leveraging Innovation: Daejeon's reputation as an innovative hub should be emphasized in marketing efforts. Highlight successful startups, research institutions, and technology parks to showcase the city's vibrant ecosystem.</p> <p>Support Network Enhancement: Strengthen the existing support networks for entrepreneurs. Encourage partnerships with local accelerators, incubators, and venture capital firms to provide mentorship, funding, and resources.</p> <p>Global Talent Attraction: Actively promote the program on a global scale through online platforms, international trade missions, and collaboration with South Korean embassies. Target countries with a strong entrepreneurial culture and potential candidates seeking opportunities abroad.</p> <p>Entrepreneurship Programs: Develop and promote entrepreneurship programs, including hackathons, innovation challenges, and startup competitions, to engage and attract global talent.</p> <p>Collaboration with Universities: Partner with local universities to tap into their research capabilities and encourage international students to explore entrepreneurial opportunities in Daejeon.</p>	<p>Strategy WO</p> <p>Collaborate with universities and institutions to offer language and cultural programs for entrepreneurs, addressing the language barrier and enhancing cultural exchange.</p> <p>Language Programs: Partner with local language institutes or universities to offer language courses tailored to the needs of foreign entrepreneurs. Ensure that administrative documents and procedures are available in English or other commonly spoken languages.</p> <p>Cultural Exchange Initiatives: Create cultural exchange programs that allow entrepreneurs to immerse themselves in South Korean culture. Encourage participation in local festivals, events, and community activities.</p> <p>Cross-Cultural Training: Provide cross-cultural training to help foreign entrepreneurs understand and navigate the South Korean business environment. This can include workshops on etiquette, negotiation styles, and business customs.</p> <p>Community Building: Establish platforms for cultural exchange and networking between local residents and foreign entrepreneurs. Promote understanding and collaboration between different cultural groups.</p>

Threats	Strategy ST	Strategy WT
<p>Global Competition: Other cities and countries may also offer similar visa programs, creating competition for entrepreneurial talent.</p> <p>Policy Implementation: Ensuring smooth implementation of the program, including visa processing and support services, is crucial to its success.</p> <p>Changing Economic Conditions: Economic fluctuations or downturns could affect the attractiveness of Daejeon as a startup destination.</p> <p>Public Perception: Negative perceptions about immigration or foreign entrepreneurs may pose a threat to the program's acceptance.</p>	<p>Mitigate the threat of global competition by continuously improving and streamlining the visa application process and support services, making Daejeon more attractive than competing destinations.</p> <p>Continuous Process Improvement: Regularly assess and streamline the visa application process. Reduce bureaucracy, simplify documentation requirements, and expedite approvals to minimize waiting times for entrepreneurs.</p> <p>Responsive Support Services: Ensure that support services such as mentorship, co-working spaces, and access to venture capital are responsive to the needs of entrepreneurs. Establish feedback mechanisms for ongoing improvement.</p> <p>Global Promotion: Develop a strong marketing and outreach strategy targeting international forums, trade shows, and tech events. Showcase Daejeon's unique advantages and the success stories of entrepreneurs who have thrived in the city.</p> <p>Networking Opportunities: Organize networking events, conferences, and workshops to foster connections between entrepreneurs, investors, and industry experts. Facilitate collaboration and knowledge sharing.</p>	<p>Implement public awareness campaigns to change perceptions about immigration and foreign entrepreneurs, reducing the threat posed by negative public sentiment.</p> <p>Public Education: Launch information campaigns aimed at the local population to educate them about the economic benefits of foreign entrepreneurs. Highlight success stories of businesses started by international founders in Daejeon.</p> <p>Engage Local Media: Partner with local media outlets to promote positive stories about foreign entrepreneurs contributing to the city's growth and innovation.</p> <p>Community Involvement: Encourage foreign entrepreneurs to actively engage with the local community, participate in community service, and contribute to the city's development.</p> <p>Policy Advocacy: Work with local policymakers and community leaders to advocate for policies that promote diversity and inclusion. Highlight the value that immigrants bring to the city.</p>

4.1 Vision and Objectives

If we propose to introduce a new visa or pathway to increase foreign participation, this process will not only be time consuming but also require the approval of the Ministry of Justice (MoJ). Hence, the solution is not looking outward, but looking inward - the city level. According to the Local Autonomy Act, the city of Daejeon has the right to create programs which benefit their residents as well as promote economic development. So by integrating the policies for Social Integration Act as well as the Foreign Employment Act, Daejeon City shall launch an innovative pilot project which shall increase foreign participation - via the E-3 Researcher Visa.

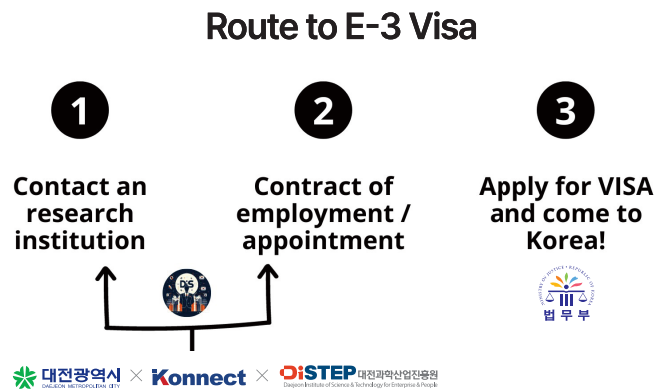
The Daejeon Innovative Scholars (DiS) Program aims to position Daejeon as a welcoming and innovative destination for entrepreneurs worldwide. By providing a clear pathway to entrepreneurship, access to support networks, and a route to permanent residency, this policy will drive economic growth, foster innovation, and enhance the city's reputation as a global startup hub.

Objectives:

- 1. Attract and Retain Global Talent:** Attract and retain a diverse pool of innovative entrepreneurs and startups from across the globe to establish and grow their businesses in Daejeon.
- 2. Foster Innovation:** Cultivate an environment that encourages groundbreaking ideas, fosters technological innovation, and supports the development of disruptive technologies.
- 3. Promote Economic Growth:** Drive economic growth by stimulating the creation of high-value jobs, new business ventures, and investment opportunities within Daejeon.
- 4. Ensure Inclusivity:** Ensure that the Daejeon Global Start-Up Visa Program is inclusive and accessible to entrepreneurs of all backgrounds, fostering diversity within the local startup community.
- 5. Promote Sustainability:** Encourage startups to focus on sustainable practices, green technologies, and environmentally conscious solutions that contribute positively to the environment.
- 6. Cultivate Local Talent:** Promote knowledge transfer and collaboration between international entrepreneurs and the local workforce, nurturing a skilled talent pool in Daejeon.
- 7. Strengthen the Ecosystem:** Continuously improve the Daejeon startup ecosystem by adapting policies, offering comprehensive support, and collaborating with relevant stakeholders.
- 8. Enhance Daejeon's Global Reputation:** Elevate Daejeon's global standing as a dynamic and welcoming destination for entrepreneurs, investors, and technology enthusiasts.

4.2 Implementation Strategy and Detailed Tasks

The successful implementation of the Daejeon Innovative Scholars program requires the participation of Daejeon's Innovative Ecosystem. The prime actors of this program shall be the Daejeon City Government and DiSTEP. They shall be responsible for creating the policies and regulations for the program. Closely working with them shall be the private organization Konnect. Their duties shall include creating the digital platform (mobile app + website), collating the directory of SMEs, VCs, corporations, language centres, and startup organizations. They shall also be responsible for marketing and media of the program and performing the first layer of enrollment (recruitment). Once candidates are shortlisted, Konnect shall work in tandem with DiSTEP to allocate the optimal research institution with the business ideas of the foreigner. The final decision on the recruitment of the candidate shall be made by the Daejeon City Government - issuing of a letter of appointment - all in just 2-4 weeks. Once the candidate has been selected, they shall carry out the necessary VISA requirements stipulated by the Ministry of Justice.



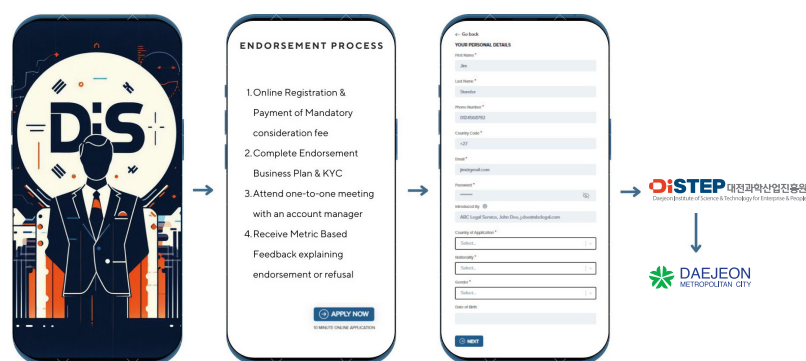
Here is an implementation strategy along with detailed tasks and responsibility team:

1. Policy Establishment and Communication:

Task 1: Draft and finalize the policy framework, eligibility criteria, and support mechanisms in collaboration with relevant government departments and stakeholders [Daejeon City + DiSTEP].

Task 2: Create an online platform (website/mobile application) dedicated to the visa pathway. [KONNECT]

Task 3: Launch a comprehensive awareness and outreach campaign to promote the program globally, targeting potential entrepreneurs, incubators, accelerators, and relevant industry organizations. [KONNECT]



2. Infrastructure Development:

Task 4: Identify and designate co-working spaces and startup-friendly facilities to provide entrepreneurs with accessible and affordable workspaces. [KONNECT + DiSTEP]

Task 5: Collaborate with local universities and research institutions to develop state-of-the-art research and innovation centers that support the program's objectives. [DiSTEP + KONNECT]

3. Support Network Establishment [KONNECT]:

Task 6: Form partnerships with local and international incubators, accelerators, and venture capital firms to provide mentorship, funding, and support to program participants.

Task 7: Utilize the existing online platform (Task 2) and create a platform that connects entrepreneurs with mentors, investors, and local businesses, facilitating networking and collaboration.

4. Visa Application and Processing:

Task 9: Establish an 'Letter of Appointment' and define the evaluation criteria for innovative business ideas, language proficiency, and financial means. Ensure transparency and fairness in the evaluation process. [Daejeon City + DiSTEP + KONNECT]

Task 10: Implement expedited 'Letter of Appointment' [e.g., 7 days] for qualified applicants to reduce waiting times. [KONNECT]

5. Entrepreneurial Support Services [KONNECT]:

Task 11: Provide comprehensive orientation and integration programs for visa holders and their families to ease their transition into Daejeon.

Task 12: Facilitate regular networking events, workshops, and knowledge-sharing sessions to encourage collaboration among program participants.

Task 13: Establish a dedicated support team to assist entrepreneurs with regulatory compliance, tax matters, and legal requirements.

6. Monitoring and Evaluation [DiSTEP + KONNECT]:

Task 14: Implement a robust monitoring system to track the progress of startups, including job creation, financial performance, and innovation outcomes.

Task 15: Conduct periodic evaluations of the program's impact on Daejeon's startup ecosystem, economic growth, and innovation landscape.

Task 16: Solicit feedback from program participants and stakeholders to identify areas for improvement and adaptation.

7. Sustainability and Green Tech Focus [Daejeon City + DiSTEP]:

Task 17: Create incentives for startups to develop eco-friendly and sustainable solutions by offering grants, recognition, and support for green technology initiatives.

Task 18: Establish partnerships with local and global organizations specializing in sustainability and environmental innovation.

8. Inclusivity and Diversity Promotion [DiSTEP + KONNECT]:

Task 19: Develop initiatives to promote diversity and inclusion within the startup ecosystem, ensuring equitable access to opportunities for entrepreneurs of all backgrounds.

Task 20: Monitor and report on diversity metrics to track progress in achieving inclusive participation.

9. Marketing and Branding [KONNECT]:

Task 21: Promote Daejeon's image as a welcoming global technology hub through international marketing campaigns, participation in tech events, and collaboration with global tech communities.

10. Regulatory Adaptation and Review [Daejeon City + DiSTEP + KONNECT]:

Task 22: Establish a policy review committee responsible for regularly assessing the program's effectiveness and adapting policies to evolving entrepreneurial and technological trends.

Task 23: Conduct periodic reviews of visa processing and policy adherence to ensure program integrity.

11. Resource Allocation [Daejeon City + DiSTEP]:

Task 24: Allocate sufficient financial resources to support program implementation, marketing efforts, and support services.

12. Reporting and Transparency [KONNECT]:

Task 25: Publish regular reports detailing the program's achievements, impact, and outcomes, ensuring transparency and accountability.

13. Global Networking and Collaboration [KONNECT]:

Task 26: Foster international collaborations with other startup visa programs, global tech hubs, and innovation clusters to enhance Daejeon's global visibility and facilitate cross-border entrepreneurship.

14. Local Talent Development [KONNECT]:

Task 27: Collaborate with local educational institutions to develop programs that enhance the skills and employability of the local workforce, ensuring they can effectively contribute to the startup ecosystem.

By systematically implementing these tasks, Daejeon can effectively launch and sustain the Daejeon Innovative Scholars Program attracting innovative entrepreneurs and startups while nurturing a thriving entrepreneurial ecosystem. Regular evaluation and adaptation will be crucial to ensuring the program's ongoing success and relevance.

5.1 Economic Expectations and Benefits

The Daejeon Innovative Scholars Program is expected to yield significant economic expectations and benefits for both the city of Daejeon and South Korea as a whole. These expectations and benefits include:

- 1. Job Creation:** The program is anticipated to stimulate job creation as successful startups hire local talent, resulting in a more robust job market in Daejeon. This will reduce unemployment rates and contribute to the city's economic vitality.
- 2. Economic Growth:** The influx of innovative entrepreneurs and startups is expected to drive economic growth in Daejeon. The creation of new businesses and the expansion of existing ones will lead to increased economic activity, contributing to the city's GDP and tax revenue.

Financial Plan and Growth for DIV

	Cost	Applications			Total Revenue (KRW)		
		Y1	Y2	Y3	Y1	Y2	Y3
Endorsement Certificate	1,000,000	500	1000	2000	500M	1B	2B
Endorsement Services (CV + Business Plan + Coaching)	2,000,000	100	500	1000	200M	1B	2B
Living Expenses (90% success rate)	1,000,000 X 12 months	450	900	1800	5.4B	10.8B	21.6B
TOTAL REVENUE					6.1B	12.8B	25.6B

* The financials are prepared for a single applicant

- 3. Investment Inflows:** As Daejeon becomes a recognized global technology hub, it is likely to attract foreign and domestic investments. Venture capital firms and angel investors will show interest in the startups incubated under the program, leading to increased investment inflows.
- 4. Technological Advancement:** The startups nurtured through the program are expected to introduce cutting-edge technologies and innovations to the market. These innovations can have a profound impact on various industries, spurring technological advancement and competitiveness.
- 5. Global Business Expansion:** Successful startups may choose to expand their operations globally, which can contribute to the export sector of South Korea. This can enhance the country's global trade relations and balance of payments.
- 6. Supporting Industries:** The growth of the startup ecosystem is likely to benefit supporting industries such as real estate, hospitality, and service providers. The demand for office spaces, accommodation, and business services is expected to increase, boosting these sectors.
- 7. Talent Attraction:** The program will attract a diverse pool of international talent to Daejeon, including skilled workers, researchers, and entrepreneurs. This influx of talent can positively influence the city's intellectual capital and enhance its reputation as a knowledge hub.

- 8. Cultural and Social Diversity:** The presence of a diverse group of entrepreneurs and startups will contribute to the cultural and social diversity of Daejeon. This diversity can enrich the city's cultural fabric and foster cross-cultural understanding.
- 9. Sustainability Initiatives:** Encouraging startups to focus on sustainable practices and green technologies can lead to environmentally conscious innovations. This aligns with global trends towards sustainability and positions Daejeon as a leader in eco-friendly solutions.
- 10. Local Business Ecosystem:** The program will strengthen the local business ecosystem by fostering collaboration between startups, established companies, universities, and research institutions. This collaborative environment can lead to synergies and knowledge-sharing, benefiting all stakeholders.
- 11. Education and Skill Development:** Collaboration with local educational institutions can result in educational programs tailored to the needs of the startup ecosystem. This can enhance the skills and employability of the local workforce.
- 12. Long-Term Economic Benefits:** The program's pathway to permanent residency for successful entrepreneurs ensures their long-term commitment to Daejeon. This can lead to sustained economic benefits over the years as startups mature and thrive.

In summary, the Daejeon Innovator Visa Program is expected to contribute significantly to economic growth, job creation, technological advancement, and the overall prosperity of Daejeon and South Korea. By fostering a dynamic and inclusive startup ecosystem, the program positions Daejeon as a key player in the global innovation landscape.

5.2 Social Expectations and Benefits

The Daejeon Global Start-Up Visa Program is expected to bring about a range of social expectations and benefits that will positively impact the city and its residents. These social expectations and benefits include:

- 1. Cultural Diversity:** The program will attract a diverse group of entrepreneurs and startups from around the world. This infusion of international talent will enrich the cultural diversity of Daejeon, leading to a more cosmopolitan and culturally vibrant city.
- 2. Knowledge Exchange:** The presence of startups and entrepreneurs with varied backgrounds and experiences will foster knowledge exchange and cross-cultural learning. Local residents will have opportunities to engage with global innovators, enhancing their understanding of different cultures and perspectives.
- 3. Cultural Exchange:** The program's international participants will contribute to cultural exchange in Daejeon. This can lead to cultural festivals, exhibitions, and events that promote intercultural understanding and appreciation.
- 4. Social Integration:** Daejeon will implement programs and initiatives to facilitate the social integration of international entrepreneurs and their families. This will create a welcoming environment where newcomers can easily adapt to local customs and build connections within the community.
- 5. Increased Quality of Life:** The program's focus on attracting innovative startups will result in improved services, amenities, and infrastructure in Daejeon. Residents will benefit from enhanced quality of life through better access to healthcare, education, and recreational facilities.
- 6. Education and Skill Development:** Collaboration between the program and local educational institutions can lead to skill development programs that benefit both international entrepreneurs and local residents. This can include entrepreneurship courses, workshops, and mentorship opportunities.

- 7. Job Opportunities:** As startups grow and expand, they will create job opportunities not only for international talent but also for local residents. This will reduce unemployment rates and improve the overall job market in Daejeon.
- 8. Cultural Awareness:** The program's initiatives to promote cultural integration will enhance cultural awareness among local residents. This can lead to greater tolerance and understanding of diverse backgrounds and lifestyles.
- 9. Networking Opportunities:** Residents will have opportunities to network and collaborate with entrepreneurs, investors, and professionals from various parts of the world. These connections can lead to personal and professional growth.
- 10. Community Engagement:** The program can encourage entrepreneurship-related community engagement activities. Residents can participate in events, conferences, and innovation challenges, fostering a sense of community involvement.
- 11. Global Reputation:** Daejeon's transformation into a global technology hub will elevate its reputation on the global stage. This can attract not only entrepreneurs but also tourists, students, and professionals, further enriching the city's social fabric.
- 12. Cultural and Artistic Expression:** With increased cultural diversity, Daejeon may witness a surge in artistic expression, including music, art, cuisine, and fashion, reflecting the varied backgrounds and influences of its residents.

In summary, the Daejeon Innovator Visa Program is expected to bring social benefits that include cultural diversity, knowledge exchange, improved quality of life, increased cultural awareness, and enhanced community engagement. These social benefits will contribute to a more vibrant, inclusive, and interconnected city, enriching the lives of both international participants and local residents.

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PART 3.

Daejeon City Policy Proposal: Daejeon International Research Grants Program



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1.1 Background and Importance of the Initiative

Daejeon, positioned as a vanguard within the burgeoning knowledge economy, has borne witness to an exceptional trajectory of development, largely propelled by the synergy of numerous research institutes, universities, and technology enterprises, as documented by Kang (B. S, 2021). However, the city confronts formidable challenges of a more comprehensive nature, necessitating a nuanced and multifaceted strategy to address them.

In pursuit of maintaining its competitiveness and preeminence on the global innovation stage, Daejeon finds itself confronted with a set of overarching concerns. Foremost among these challenges is the imperative to respond to a pressing labor shortage crisis, stemming from the convergence of an aging demographic, diminished birth rates, and regional disparities compared to metropolitan areas. This macro-level predicament holds pivotal importance, for it bears directly on the city's capacity to sustain its growth and vitality.

Furthermore, the policy initiative thoughtfully encompasses recent developments, notably the emergence of pertinent issues concerning the Immigration Office and the expedited naturalization process designed for scientists and engineers. By thoughtfully incorporating these aspects into the policy framework, the initiative acquires depth and resonance, fostering an ecosystem primed to not only attract but also seamlessly integrate international researchers into the social fabric of Daejeon. This holistic approach not only stimulates collaboration but also bridges knowledge disparities, ultimately expediting Daejeon's ascension on the global stage as an epicenter of innovation and excellence.

1.2 Current Local Issues and Status in Daejeon City

In Statista's 2023 report on government expenditure in South Korea, with a focus on Education and Science, we observe a significant surge in research and development (R&D) expenditure. In 2021, the combined investment in R&D, spanning both the public and commercial sectors, exceeded 102 trillion South Korean won, signifying a noteworthy increase from the previous year's approximately 93 trillion South Korean won. This upward trend underscores the consistent growth in R&D investment within South Korea in recent years.

A closer analysis of this expenditure reveals that Daejeon emerges as a leader in terms of R&D professionals per one thousand individuals, boasting a ratio of 35.9 individuals. Following Daejeon are Seoul with 18.0 individuals, Gyeonggi-do with 17.6, Sejong with 16.8, Chungcheongbuk-do with 11.6, and Chuncheonnam-do with 14.4 individuals per thousand.

Nonetheless, Daejeon faces formidable challenges in the realm of R&D, including intense competition for research funding, limited international engagement, and insufficient resources to support its local researchers. A deeper dive

into the city's research landscape exposes issues pertaining to the supply and demand of human resources for local companies, particularly in recruiting top-tier R&D personnel. This understanding is further enriched by incorporating concrete numerical data.

Daejeon's remarkable R&D expenditure underscores the region's unwavering commitment to fostering research and development. Notably, in the year 2000, R&D expenses accounted for 13.8% of the regional GDP in Daejeon, a figure that steadily increased to 18.0% by 2019, as reported by the National Atlas (http://nationalatlas.ngii.go.kr/pages/page_2700.php). Despite this substantial investment, international collaboration remains an underutilized asset in Daejeon's R&D landscape.

In response to these multifaceted challenges, our policy initiative seeks to outline a clear and strategic pathway forward. Our aim is to enhance mutual exchange and cooperation by providing robust support for R&D collaboration between local companies and foreign researchers. Additionally, we are fully dedicated to creating a support program tailored to facilitate the recruitment of exceptional R&D professionals by local enterprises.

In summary, the overarching goal of our policy initiative is to cultivate a collaborative R&D support program that seamlessly connects local companies with international student researchers. This integration of high-quality R&D personnel into Daejeon's dynamic research ecosystem fosters a harmonious relationship between the research community and local industry, propelling Daejeon towards innovation and excellence.

2.1 International Policy Trends

In recent years, a consistent upward trend in global research and development (R&D) expenditures has emerged, and projections suggest that this growth will continue into the near future. This phenomenon finds its roots in various factors, notably the growing role of R&D in driving economic advancement and bolstering competitiveness. Moreover, R&D plays a significant part in addressing both domestic and global challenges.

According to the National Science Board, the United States experienced substantial growth in research and experimental development (R&D) performance in 2019, with a total expenditure of \$667 billion. This upward trajectory persisted into 2020, with preliminary estimates indicating an increase to around \$708 billion. This expansion spanned across diverse sectors, encompassing business, higher education, federal government, nonprofit organizations, and other entities.

Additionally, it's imperative to recognize that global R&D performance is concentrated in a limited number of countries. The combined R&D efforts of the United States, China, Japan, Germany, South Korea, France, India, and the United Kingdom accounted for roughly 75% of the total global R&D performance. A notable shift in the distribution of global R&D performance is underway, as there's a discernible movement away from the United States and Europe towards East-Southeast and South Asia.

This shift, particularly pronounced in South Asia, has seen global research hubs like Singapore and Shanghai effectively attract international talent through the provision of generous research grants and supportive policies.

Building upon these trends, it is imperative to underscore the critical role of attracting and retaining excellent human resources as a benchmark of both national and corporate competitiveness. This principle is substantiated by the efforts made by countries worldwide, including notable cases such as the United States, Europe, Japan, and China. By drawing insights from these examples, the imperative to strengthen collaboration between companies and researchers emerges as a central policy objective. Such collaboration not only attracts international talent but also leverages it to enhance R&D, foster innovation, and bolster overall competitiveness.

2.2 Domestic Policy Trends

In recent years, the South Korean government has demonstrated a steadfast commitment to bolstering innovation and enhancing global competitiveness through a significant increase in funding for research and development (R&D) (Ministry of Science & ICT, 2023). This funding surge aligns with the aims of the Korea Research Foundation's project, a key initiative dedicated to attracting outstanding scientists from around the world.

The distinguishing feature of this project lies in its laser focus on the recruitment of foreign scientists, primarily through support programs operating in universities and research institutes. Central to this endeavor is labor cost support, underlining its pivotal role in the program's execution.

Nevertheless, it is imperative to acknowledge a limitation in the existing framework, primarily in the form of insufficient linkages between high-end human resources and small and medium-sized enterprises (SMEs). This shortcoming poses an opportunity for further enhancement.

It's essential to note that this program is administered by the National Research Foundation (NRF), a central government entity. However, the policy proposal for Daejeon envisions the potential to create distinct, tailored programs by nurturing deeper collaboration with local companies. This tailored approach can not only address specific local needs but also maximize the benefits of international research collaboration.

This combination of domestic and localized efforts signifies a promising avenue to strengthen R&D and innovation in Daejeon, making the city a hub for global research and development excellence.

2.3 International Policy Trends

(1) The Australian Research Council (ARC) Grant:

The ARC grant according to the Australian government, has made a real difference to Australian and the world. And it highlighted the areas in which the grant has positively impacted as:

Community Support and Safety: According to the EI National Report, numerous universities have conducted studies aimed at discovering innovative solutions to enhance community safety. The result has been a notable advancement in medical treatment development, including the creation of new technology for the Australian Defense Force.

Strengthens Community Cohesion: 35 highly evaluated impact studies delineated the ways in which research has helped to the development of more inclusive communities and surroundings.

Research grant has helped to deliver cutting-edge technology: This represented examples in companies, smartphone providers, doctors delivering medical services to their patients.

Improving everyday life: The implications encompassed advancements in medical treatments, provision of education based on individual needs, and enhancements in urban and transportation design.

Foster research commercialization income: A good example was given in the EI Submission of 2018 Assessment Handbook, the 01 Mathematics 2 UoAs had income greater than or equals to \$1 and less than \$50,000.

(2) United State of America – National Bureau of Economic Research (NBER)

The NBER working paper suggests that in order to sustain long-term economic growth, it is imperative to have a specific grant. Furthermore, to foster innovation, it is recommended to employ a highly skilled workforce with specialized knowledge in the fields of science and engineering.

The United States entices the most talented individuals to pursue their studies at its universities and entices the most exceptional among them to remain in the country after completing their education.

In the working paper, it was discovered that there is a correlation between the adaptability of site decisions to business-cycle conditions and the fluctuation of output may establish a connection between output volatility and long-term economic growth cycles.

Also, that the number of highly skilled workers appears to exhibit greater short-term volatility. This may elucidate the reasons behind fluctuations in long-term growth rates.

3.1 In the analysis results

In 2022, the Institute for Vocational Education and Training of Korea undertook a research study aimed at assessing the evolving situation of foreign Ph.D. candidates over time. This study encompassed an exploration of various hypotheses, seeking to offer valuable insights into their circumstances.

The most recent findings from this research shed light on a noticeable increase in the number of foreign Ph.D. candidates opting to pursue their doctoral studies in Korea. Nevertheless, a striking revelation emerged: a substantial 62% of these individuals, who had successfully obtained their Ph.D. degrees in Korea, subsequently left the country for their home nations or other foreign destinations. These departures were primarily driven by the pursuit of enhanced opportunities or postdoctoral studies abroad.

In response to these trends, a comprehensive analysis was conducted, utilizing both the PEST (Political, Economic, Social, and Technological) and SWOT (Strengths, Weaknesses, Opportunities, and Threats) frameworks. This analysis aimed to provide a holistic understanding of the external factors influencing this situation and to evaluate the strengths and weaknesses of Daejeon. The ultimate objective of this analysis was to determine the potential benefits of the proposed project for the city.

(1) PEST Analysis

Political Factors

Daejeon has a strong foundation for its policy objectives, supported by the government's commitment to fostering innovation and research. Notably, the Daejeon declaration on Science, Technology, and Innovation for the Global and Digital Age aligns well with the city's goals. These political factors provide the policy with a solid political framework that encourages innovation, research, and international collaboration, all of which are central to Daejeon's policy objectives.

Economic Factors

Daejeon's economy is bolstered by esteemed universities, such as the Korea Advanced Institute of Science and Technology (KAIST) and Chungnam National University. These institutions play a pivotal role in research and development, attracting financial support from various entities, including governmental bodies, industrial sectors, and private foundations. As a policy goal, the city can capitalize on these economic factors to strengthen research capabilities, foster innovation, and attract international talent.

The government's substantial investment in research and development, including the allocation of significant funds to the private sector, aligns with the policy's objectives. This economic support can further the city's research capabilities and its role as a technological hub.

Social Factors

The support for research and development in South Korea, including public and corporate endorsements, is indicative of the widespread recognition of the importance of these endeavors. The presence of multinational corporations in Daejeon, such

as Samsung, LG, and Hyundai that actively engage with local researchers demonstrates the commitment of these companies to support research initiatives. These social factors provide a conducive environment for fostering research and innovation, which correlates with the policy objectives.

Technological Factors

Daejeon is positioned as a center for research and development in cutting-edge technologies, including Artificial Intelligence, Robotics, and Nanotechnology. The city's dedication to technological innovation, backed by government funding, propels its economic growth and societal advancement. This unwavering commitment to technology aligns with the policy's objectives, promoting innovation, research, and technology advancement in the city.

(2) SWOT Analysis

Strengths

Daejeon has successfully established itself as a prominent center for cutting-edge research and development, especially in areas such as Artificial Intelligence, Robotics, and Nanotechnology. The city's administration has been instrumental in funding research infrastructure, fostering both basic and applied research, supported by the South Korean government. This has led Daejeon to emerge as a key technological hub in South Korea, supporting the policy goal of becoming a global research and innovation hub.

The city's strong commitment to technical innovation is a driving force behind its economic growth and social progress. Daejeon boasts a robust research infrastructure, a skilled workforce, and burgeoning tech sectors, positioning it among the top innovative cities globally. This strength aligns with the policy goal of furthering Daejeon's reputation as a hub for technological innovation.

Weaknesses

While Daejeon has made significant progress, it remains less recognized on the global stage compared to research centers like Seoul or Cambridge. This relative obscurity hampers local researchers in terms of gaining international attention and securing funding. To achieve the policy objectives, addressing this lack of global recognition should be a priority.

The issue of brain drain is noticeable in South Korea, with proficient researchers educated in Daejeon often seeking opportunities abroad. If this trend continues in Daejeon, it could adversely affect the city's scientific ecosystem and hinder the achievement of the policy objectives. Therefore, strategies to retain local talent and attract international researchers should be a focal point.

The official language of South Korea being Korean presents a language barrier for international scholars. As a policy goal, promoting language inclusivity and enhancing the employability of international scholars can address this challenge and support Daejeon's reputation as a global research hub.

Additionally, limited international visibility and stiff competition from global research hubs are challenges that need to be overcome to realize the policy objectives. Efforts should be directed at enhancing global recognition and collaboration.

Opportunities

Daejeon presents a range of opportunities that align with the policy goals, including its relatively affordable cost of living, high quality of life, and proximity to major urban centers within South Korea. The city's strong scientific infrastructure, conducive environment, and commitment to international collaboration contribute significantly to attracting scholars from around the

world, supporting the policy objectives.

The global interest in South Korea's technological ecosystem presents significant opportunities for collaborations between academia and industry, further supporting the policy objectives.

Threats

The ongoing brain drain in South Korea poses a risk to Daejeon's pool of qualified researchers, potentially impacting research funding. Mitigating this trend and retaining local talent should be a priority.

Economic challenges, such as inflation and rising interest rates, could lead to reduced government allocations for research and development. This situation may affect the availability of research funds in Daejeon, posing a potential threat to policy objectives. Therefore, efforts to secure research funding from diverse sources should be considered.

3.2 GAP Analysis

Despite the emergence of the fourth industrial revolution (4IR), the shortage of skilled workforce in Korea is steadily rising due to dropping birth rates and an aging population.

The study conducted by the Institute for Vocational Education and Training of Korea revealed a significant shortage of highly skilled individuals in the workforce. Despite training thousands of these skilled individuals in various institutions in Korea, many are leaving the country to contribute to the economic growth of other nations.

This proposal highlights the pressing need for a dedicated grant aimed at attracting and retaining highly skilled researchers in Daejeon, hence promoting the city's economic growth.

4.1 Vision and Objectives

Vision:

Establishing a Global Talent Linkage Ecosystem and position Daejeon as a leading global research hub.

Objectives:

Promote Joint R&D Support Programs: Facilitate collaborative research initiatives between local companies and international student researchers, creating a robust linkage of high-quality R&D personnel.

Attract and Retain Top-Tier International Researchers: Cultivate an environment that attracts and retains excellent researchers, thereby strengthening Daejeon's research capabilities.

Foster Cross-Disciplinary Collaboration: Encourage inter-disciplinary cooperation to spark innovation and drive research breakthroughs.

Enhance Local Innovation: Catalyze local innovation by integrating international expertise, leading to the development of cutting-edge technologies.

Contribute to Global Knowledge Advancement: Share research outcomes on a global scale to further global knowledge and address pressing global issues.

4.2 Implementation Strategy and Detailed Tasks

Strategy:

Develop and implement the Daejeon International Research Grants Program.

Tasks:

Establish an International Selection Committee: Form a committee comprising experts in research, industry, and academia to oversee the selection process.

Create a Competitive Grant Application Process: Design an application process that emphasizes merit, innovation, and alignment with local industry needs. Encourage collaboration between international and local researchers.

Promote the Program through International Research Networks: Leverage partnerships with institutions like KAIST, UST, and Chungnam National University, tapping into their international student pool and global networks.

Establish an Excellent R&D Manpower Pool: Focus on cultivating a pool of exceptional R&D talent, with an emphasis on international students from key universities.

Identify Companies in Need of Overseas Workforce: Identify and engage with companies in Daejeon requiring specialized overseas workforce.

Facilitate Joint R&D Task Applications: Encourage collaboration between grant recipients and local companies by matching technology and industry sectors.

Allocate 20 to 30 Million Won per Project: Support up to 10 projects with a budget range of 20 to 30 million won each, ensuring effective resource allocation.

Provide Additional Support for Employment-Linked Programs: Enhance the program's impact by offering supplementary support for initiatives that lead to local employment opportunities, reinforcing the connection between research and economic growth.

4.3 Eligibility and Selection Criteria

Researchers in the field of STEM and Management must meet the eligibility and selection criteria as stated by the committee or panelist. However, each potential candidate:

Eligibility

Must have completed B.Sc/M.Sc/Ph.D.

Must have a high GPA, the benchmark of the GPA would be determined by the panelist or committee.

Must demonstrate strong willingness to stay in Daejeon after graduation.

Selection Process

A committee comprising of representatives from Daejeon Metropolitan city representatives, educators (that is, Professors from various Higher Learning Institutions in Daejeon), captains of industries, would consider the plan of the researcher, which must include staying and working on impactful research.

The research would seek to enhance the global ranking of Daejeon as a leading innovation hub and bolster the city's economy.

4.4 Funding

General Tax Revenue:

An allocation of a portion of tax revenue should be set aside to fund the scholarship grant yearly. This should not be considered as a subsidy for research grant, but rather as an investment in the future economic development of Daejeon. Therefore, reasonable sum should be allocated based on its revenue to sustain the initiative.

Corporate Donations:

The Daejeon Metropolitan government should actively seek an annual contribution from corporations based in the city, such as Samsung and LG Chemicals. These companies should be urged to make a recurring commitment as part of their Corporate Social Responsibility (CSR) to the city.

Individual Donations:

Donations from well-to-do individuals should also be encouraged.

4.5 Implementation

Daejeon Metropolitan Government in partnership with local Universities and Businesses jointly create a legacy funding scheme.

The development of a website where prospective applicants can submit their grant applications. Once the application is submitted, the applicant will receive a confirmation and an enrollment number, indicating the scheduled date for an interview.

Once the applicant is successful, the Daejeon Research Council will start liaising with the candidates on impactful research.

Economic and Social Expectations and Benefits

Undoubtedly, there is a strong likelihood that Daejeon will experience significant social and economic advantages if it approves and implements this policy plan. The possible benefits the proposal would attract are:

Daejeon would become a pipeline of talented workers through the commitment of Daejeon Metropolitan government to excellence in research by supporting world-class researchers to conduct research in the city.

Grow Daejeon trade, investment, and business linkage: Foster a more cohesive community by cultivating a cohort of students who are dedicated to staying in the city after completing their education, thus actively contributing to the city's economic expansion and progress.

Improve quality of life in Daejeon citizens as researchers would get involved in the community.

Continue to promote Daejeon capabilities and credentials in education, sciences, research, and innovation.

Invest in future of Daejeon by keeping talented and educated researchers in the city.

Ensure the city's long-term prosperity and success.

Strengthen diplomatic access and influence.

Showcase Daejeon as a contemporary, innovative, and open society.

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GLOBAL INNOVATION



PART 4.

Daejeon City as a Role Model of Urban Innovation Hub



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1.1 Background and Importance of the Initiative

Keywords: digital age, digital transformation, techhubs, startup ecosystems

As we progress further into the digital age, our focus should extend to the transformation of cities with technology. To remain competitive, cities must undergo a process of reshaping, adaptation, and innovation. One of the most effective ways to achieve this is by nurturing tech hubs and fostering startup ecosystems. In the quest for innovation, tech hubs, and startup ecosystems have emerged as pivotal drivers of economic growth worldwide. They offer a potent combination of benefits, including job creation, a substantial boost to local economies, increased tax revenue for local governments, and the attraction of venture capital investments and international investors. This unique blend of advantages allows cities to evolve into thriving innovation ecosystems.

Keywords: ripple effect, driven by science and technology

The ripple effect of this transformation extends beyond the tech sector, influencing various industries such as transportation, hospitality, retail, and local tourism. As cities embrace innovation through tech hubs and startups, they unlock new opportunities and drive positive change across their entire economic landscape.

In the technological progress, cities inevitably face their own set of urban challenges. These challenges include talent loss and sluggish economic growth stemming from a lack of innovation. In the wake of the UCLG event hosted in 2022, Daejeon City made a resolute declaration – a commitment to becoming a city where no one is left behind, driven by the power of science and technology.

Keywords: urban life, glocal-local, sustainability, people-centered cities

The UCLG event served as the catalyst for Daejeon's journey toward harnessing technology for the betterment of urban life. It marked the beginning of an exploration into the pivotal role that technology plays in shaping the future of cities. Additionally, it fostered global-local collaborations aimed at promoting urban sustainability and improving the quality of life for all residents. This aligns perfectly with the vision of creating people-centered cities, as articulated in an OECD declaration in 2015 (OECD, 2015).

Keywords: Korea's hub of science and technology, R&D initiatives

Daejeon, renowned as Korea's hub of science and technology, stands as a global leader in the development and implementation of cutting-edge solutions. Within the Daejeon metropolitan area lies the Daedeok Research Complex, a dynamic hub where universities, government-funded R&D centers, and affiliated research corporations collaborate. This collective effort supports approximately 15% of Korea's national R&D initiatives. Furthermore, Daejeon hosts offices related to intellectual property, national statistics, and public procurement, further enhancing its appeal as a hub for various urban tech initiatives.

Keywords: high-tech leader, urbantech, startup technology-oriented companies

However, despite its position as a high-tech leader, Daejeon faces unique urban challenges. As technology continues to advance at an astonishing pace, the city finds itself struggling to keep pace with innovation and urban issues. A report released by a European consortium defines urbanTech as technology that elevates the connectivity, livability, and efficiency of cities and urban environments (Blackwell, T., & Chambers, M., 2017). The Urban US investor playbook highlights the interconnection

between startup technology-oriented companies and the realm of urbanTech, where they play a direct and transformative role in enhancing the quality of life in cities. UrbanTech encompasses various sectors, including the built environment and real estate, infrastructure and industry, food, waste, and water management, public health and safety, energy and grid systems, government technology (GovTech) and civil solutions, as well as transportation and mobility.

keywords: talent retaination, urbantech hubs, global high-tec hub, human capital

The absence of vibrant urbantech hubs that can attract and retain talent, as well as provide startups with a platform to tackle urban challenges, threatens to lead to a "brain drain" (Mulas, V., et.al, 2015). Talented individuals are increasingly inclined to seek better opportunities elsewhere, in cities that are surging ahead toward a more digital and tech-driven future (Bughin, et.al., 2018).

While Daejeon has firmly established itself as a global high-tech hub, it faces a critical juncture. To ensure its continued growth and prosperity, it must prioritize the development of urbantech hubs that can solve urban issues of the city, nurture talent and drive innovation. This way, Daejeon can avoid the risk of losing its most valuable resource – its human capital – to cities that are forging ahead into the digital and tech-driven era.

1.2 Current Local Issues and Status in Daejeon City

Daejeon, as a city, is organized into five self-governing districts, each with its unique characteristics and responsibilities. These self-government places, often referred to as "Gu" in Korean, serve as administrative subdivisions within the city.

Table 1. Districts of Daejeon.

District	Characteristics	Example of current urban Challenges
Yuseong District	Is known for its hot springs and spa facilities, making it a popular destination for wellness and relaxation. It is also home to Daejeon Expo Park, which showcases the city's commitment to science and technology.	Promoting tourism and maintaining its reputation as a hub for health and innovation. Protect vulnerable areas such as dark alleys, between studio apartments, and rivers around university areas where young single-person households are concentrated.
Dong District	It is a bustling center of commerce, housing various markets, shopping centers, and corporate offices.	Prevent and manage emotional isolation and lonely death of seniors living alone
Seo District	It aims to create a high-quality living environment for its citizens and improve the overall well-being of the community.	Urban regeneration and area revitalization.
Jung District	The central district serves as the administrative heart of the city, housing government offices and institutions.	Flooding of the three major rivers due to unpredictable climate change Rapid Industrialization
Daedeok District	Is recognized for its concentration of research and technology institutions, including the Daedeok Science Town.	Help to improve operation of local administrative welfare center to protect seniors living alone

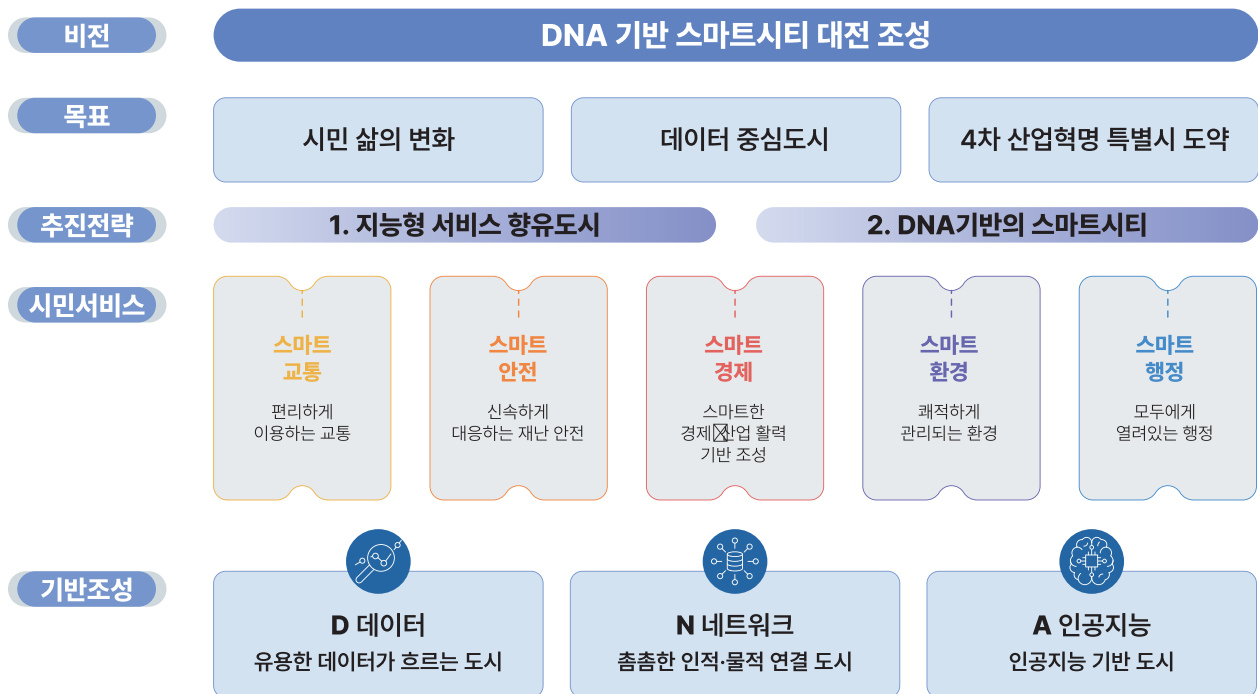
* Sources: <https://www.ccherald.kr/news/articleView.html?idxno=29454> ; <http://www.atnnews.co.kr/news/articleView.html?idxno=32383>

Keywords: cutting-edge, innovation, disasters, preservation

At the national level, Daejeon holds strategic importance for Korea due to its concentration of research and development institutions, technology hubs, and educational centers. It is a hub for cutting-edge advancements in science and technology, contributing significantly to the nation's innovation and economic growth.

However, Daejeon also faces several pressing urban issues. These include problems with rescue activities and emergency medical services, particularly in light of the city's growing elderly population. Natural disasters, such as floods and landslides, which poses recurring threats, necessitating improved disaster preparedness and response. Issues related to illegal waste dumping, the conservation of essential areas like lakes and water bodies, and the preservation of forests, parks, and nature preservation areas are also significant concerns.

Figure 1. Development of Smart City Competition based on D.N.A.



Keywords: transform into a smart city, challenges, data, network, AI

Last year, Daejeon unveiled its vision to transform into a smart city, with a primary focus on five key areas: enhancing transportation convenience, establishing rapid disaster response systems, fostering a smart economy, strengthening the foundational aspects of various industries, and creating a more pleasant environment for its residents. These initiatives align perfectly with our broader vision to cultivate a unique urban tech hub per each Daejeon district where technology plays a pivotal role in addressing diverse urban challenges. Considering Daejeon City's vision to become a smart city lead by data (D), network (N), and artificial intelligence (A), we find ourselves with a unique opportunity to transform Daejeon into a city that fosters innovation to solve its unique urban challenges.

2.1 International Policy Trends

Keywords: new centers, urban and rural, incubators, start-ups

In the United States, officials from the public and private sectors are collaborating to establish innovation centers in both urban and rural areas. New centers of innovation are emerging, taking ideas from more established ones like Silicon Valley and Boston, such as Indianapolis 16 Tech Innovation District and Tulsa Innovation Labs.

According to McKinsey & Company Report, there is around \$2 trillion in new federal investment set to increase US innovation, competitiveness, and national security over the next ten years, and the time is right to start new centers. Innovation hubs are places where R&D organizations (such as tech-enabled businesses, academic institutions, and healthcare facilities) can collaborate with venture capital, incubators, and start-ups. They fall into three categories: smaller districts, midsize tech hubs, and larger cross-regional ecosystems.

Keywords: advantages of innovation, entrepreneurial, new business ventures

The potential advantages of innovation hubs show six crucial elements that local government should take into account when establishing and sustaining an ecosystem that encourages vitality, draws top talent, and opens up fresh and significant chances for economic and social progress, these elements are aspiration and a bold vision; cluster and partner strategy; capital and funding; talent and community building; real state, infrastructure, and placemaking; and diversity, equity, and inclusion.

An illustrative case in point is Urbantech NYC, which lends support to entrepreneurs and researchers while also offering workspace to help establish New York City as a global epicenter for innovation in urban technology. Urbantech NYC's primary focus revolves around addressing the distinctive challenges of urban living, ranging from transportation and logistics to food accessibility and waste management. Through the provision of flexible and cost-effective workspace, facilitating connections among innovators, and fostering cutting-edge research, Urbantech NYC is actively delivering tangible benefits for the future technology leaders of the city and, consequently, for the entire city of New York.

It's important to note that an adequate set of policies can help create a favorable environment for Urbantech hubs. However, the success of a urbantech hubs will also depend on cultural factors, entrepreneurial spirit, and the willingness of all stakeholders(public and private) to collaborate and take risks.

Keywords: clusters and science research

Another instance that underscores the significance of urbantech initiatives is found in Singapore, which offers a compelling showcase. Here, the government's unwavering commitment to its strategic objectives is vividly demonstrated through the establishment of industry-specific creative clusters and the presence of scientific research organizations like ASTAR and SPRING. This shift in emphasis towards innovation and the development of creative clusters within Singapore has not only facilitated the emergence of new policy frameworks but has also given rise to innovative policy approaches. For example, one notable approach involves the promotion of industrial preference through research and development (R&D). These policy developments in Singapore exemplify the importance of creating a conducive environment for urbantech hubs.

Keywords: policy frameworks, urban renewal authority

Although industry representatives have historically been a part of Singapore's development policy frameworks, the country's

support of innovation has led to the involvement of research institutes, academics, and technological specialists. Singapore's policy approach is still predominantly state-driven and is based on a developmental model that cuts across functional areas and agencies, notwithstanding its expanding inclusiveness. Where urban planning supports industrial development through the supply of infrastructure and the categorization of land uses, this is particularly obvious. The Urban Renewal Authority has set up technical test sites and creative clusters all around the city, with the cluster-siting process still being centrally organized.

Keywords: reutilization of infrastructure, urban innovation, emerging districts, creating jobs

A more specific example is the city of Berlin. Berlin boasts one of Europe's wealthiest and swiftest expanding urban tech ecosystems. As the new Brandenburg Airport takes its place, the former Tegel Airport in the city is undergoing a transformation into an "innovation park" with a focus on the technologies vital to 21st-century cities. This site will serve as a hub for the research, development, production, testing, and exportation of urban technologies. This development is part of a larger trend encompassing numerous substantial real estate projects, including the now-discontinued Quayside campus of Sidewalk Toronto. These projects are designed around the concept that urban innovation is the primary industry to target in these emerging districts. This highlights a future in which local economic development objectives not only center around creating jobs in urban innovation but also aim to establish neighborhoods that are appealing to urban tech professionals and companies. Moreover, governments will play a pivotal role in establishing adaptable protocols conducive to technological experimentation, thus becoming essential enablers of the industry (BerlinTxI, 2023).

Keywords: global entrepreneur program, visa support, co-working spaces.

Lastly, the evolution of development strategies reveals a movement in favor of encouraging cooperation and creativity for Urbantech hubs, the launch of the Global Entrepreneur Programme (GEP) in the United Kingdom in 2003, which main goal is to make it easier for ambitious and innovative business in urbantech. Also, the program has been supporting scale-ups as a government initiative fostering a dynamic synergy between international entrepreneurs and the evolving needs of urbantech. These policies include.

Visa Support: assistance for business owners wishing to open a UK location. Support Network: entrepreneurs can access a network of seasoned and qualified mentors, advisors, and professionals. Business Incubation: this program includes access to co-working spaces. Market Entry Assistance: helps to understand the market and navigate regulatory requirements. Networking Opportunities: facilitates networking with potential investors, partners, and customers. Access to Funding: helps entrepreneurs to funding options available in the UK, including venture capital, angel investors, and government grants or incentives.

2.2 Domestic Policy Trends

Keywords: industrial development, innovative business.

Before and after 1980, there were two distinct periods in Korea's innovation system. Before 1980, industrial development that was dependent on imported technology was prioritized over innovation. After 1980, the central government began encouraging private companies to innovate, and it became clear that internal R&D was essential to staying competitive in the global market.

In the 1990s, as the Korean economy began to lose some of its competitiveness due, among other things, to the weakening of the Yen and rising wages in the nation, a significant policy change toward small, innovation-driven, and technology-oriented startup enterprises occurred. The Act on Special Measures for the Promotion of Venture Businesses, which was passed in 1997, made it easier to start and run venture businesses.

In the center of South Korea, the startup ecosystem in Seoul is a vibrant and quickly developing center for innovation and entrepreneurship. Seoul has established itself as a popular destination for entrepreneurs, innovative businesses, and creative minds from all over the world thanks to its energetic and forward-thinking atmosphere. The ecosystem offers a wealth of advantages for businesses, including a robust infrastructure, government assistance, access to cutting-edge technology, and a talent pool.

Keywords: industrial giants, chaebols, creative economy.

Seoul's evolution has also been marked by its integration into the global economy. The city's well-established industrial giants, known as chaebols, have emerged as significant contributors to global production networks (Yeung, 2015). Additionally, the central business district has experienced a substantial influx of foreign investment, which is evident in the vibrant market for office spaces (Kim, O'Connor, & Han, 2015).

During Korea's era of rapid development, the government has consistently prioritized economic growth and shown a recognition of the significance of fostering creativity and innovation. An illustrative instance is the newly implemented Creative Economy initiative, which seeks to generate employment opportunities, enhance the competitiveness of businesses, and promote creativity. Other instances of the government's commitment to bolstering innovation include the introduction of a creative economy action plan in 2013 and the establishment of the Ministry of Science, ICT, and Future Planning (Hartley, 2018).

Keywords: urban planning, testbeds, living labs, smartization.

On the other hand, Korea has been actively pursuing various plans to transform its cities into smart cities. For instance, in 2018, Seoul launched its smart city strategic plan, marking a significant milestone in urban planning and governance. The smart cities approach offers an innovative technological solution to address urban challenges. Korea has expanded its policies to include novel concepts like testbeds, living labs, and the innovative ecosystem of Fourth Industrial Revolution technologies. These policies have also facilitated the development of national pilot cities, the smartization of existing urban areas, and the creation of an industrial ecosystem. Thanks to robust government support and proactive policies, numerous local governments are now championing the advancement of smart cities. As evidence of this commitment, 78 local governments across the country have established dedicated organizations for smart city initiatives. While other 67 local governments are participating in smart city government projects.

Keywords: uniformly resources allocation, decentralization.

Nonetheless, it's important to acknowledge that technology innovation ecosystems are not uniformly flourishing in all cities. Some urban areas are witnessing a more rapid and sustainable growth of these ecosystems, which translates to an increased presence of startups, higher levels of investment, greater employment opportunities, and enhanced economic expansion. In 2017, the South Korean government incorporated decentralization as a pivotal element among its top 100 tasks, aiming to foster balanced development across all regions (Goal IV), encourage autonomy and decentralization to empower grassroots democracy (Strategy 1), and bolster fiscal decentralization to achieve financial autonomy (Task 75) (OECD, 2021).

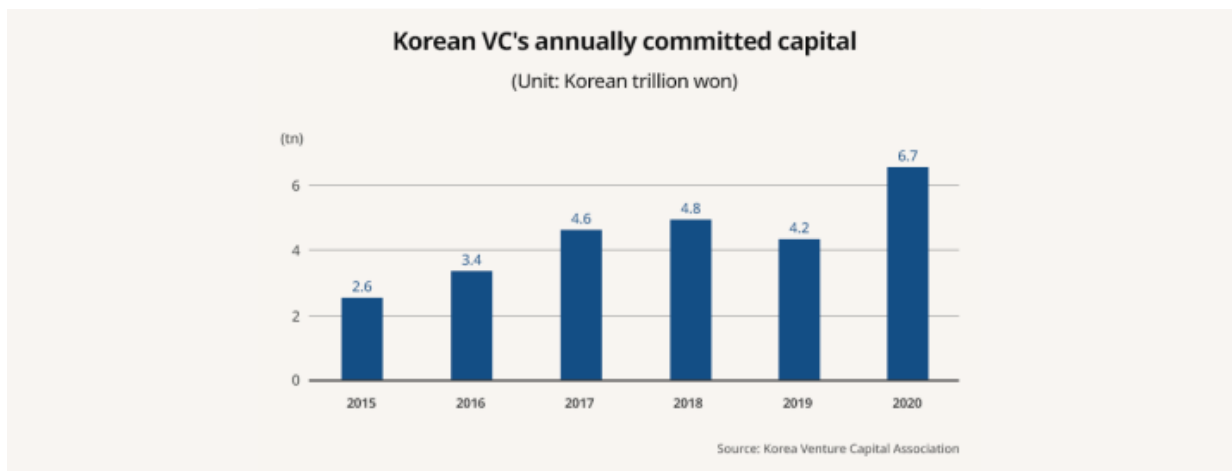
Keywords: Startup Korea, business incubators, Digital Media City.

In addition to the efforts to promote a creative economy, the Ministry of SMEs and Startups of South Korea released "Startup Korea" which is a comprehensive policy for the mid-and long-term support of startups and foster entrepreneurship. Following this initiative, in 2016, the Seoul Metropolitan Government (SMG) launched the Seoul Global Startup Center, offering complimentary co-working spaces for foreign entrepreneurs operating within Korea. Additional initiatives encompass business incubators, such as Google's inaugural Asian campus, and organizations designed to facilitate collaborations between entrepreneurs and companies. One notable instance is the "Digital Media City (디지털 미디어 시티)," which has hosted

more than 400 companies in the fields of media, entertainment, and IT. It serves as a comprehensive community that links researchers, venture capital firms, and businesses within the digital media sector.

Another significant driver of innovation in South Korea is the presence of diverse Korea Venture Capital firms, playing a pivotal role in the transformation of ideas into viable businesses. These firms contribute substantially to the nation's economic progress and global competitiveness. The collaborative efforts among venture capitalists, entrepreneurs, and other stakeholders have given rise to a dynamic ecosystem that continues to evolve and thrive. According to data from the Korea Venture Capital, South Korea's startup landscape has witnessed a notable surge, with various companies gaining prominence. Korean entrepreneurs have successfully raised approximately 1.5 trillion won in funding since 2015. Notably, this figure nearly tripled in the year 2020. During that year, Korean Venture Capital firms committed capital amounting to around 6.7 trillion won, as depicted in Figure XX. However majority of this VC are currently located in Seoul which create a disparity in the country innovation.

Figure 2. Korean Venture Capital



* Source: <https://www.kedglobal.com/korean-startups/newsView/ked202108020006>

3.1 PEST and SWOT Analysis

In order to gain deeper insights into the preceding analysis, we have undertaken both PEST (Political, Economic, Social, and Technological) and SWOT (Strengths, Weaknesses, Opportunities, and Threats) assessments. These comprehensive analyses are essential to evaluate the strategic context surrounding our proposal for Daejeon to establish UrbanTech hubs. They offer a comprehensive exploration of both external and internal factors that could shape the outcome and effectiveness of this ambitious initiative.

(1) PEST Analysis:

Political:

Opportunities: Daejeon's commitment to becoming a technology-driven city aligns with international policy trends, such as the establishment of innovation centers and support for startups. Collaboration with national and local governments can provide regulatory support and funding opportunities.

Threats: Political changes at the national or local level could affect the continuity of support for Daejeon's UrbanTech initiative.

Economic:

Opportunities: Daejeon can tap into national investments in innovation and competitiveness. The potential for increased economic growth and job creation is a significant advantage.

Threats: Economic fluctuations and budget constraints could impact the availability of funding for the initiative.

Social:

Opportunities: Daejeon's reputation as a hub for science and technology can attract talent and foster an entrepreneurial spirit. The initiative aligns with the global trend of promoting innovation for economic and social development.

Threats: Resistance to change and a lack of entrepreneurial culture could hinder the initiative's success.

Technological:

Opportunities: Daejeon's technological infrastructure and expertise provide a strong foundation for UrbanTech innovation. The city can leverage its tech resources to create cutting-edge solutions.

Threats: Rapid technological advancements may require continuous investment and adaptation to remain competitive.

(2) SWOT Analysis:

Strengths:

Daejeon's reputation as a global leader in science and technology.

Strong technological infrastructure and research institutions.

Government commitment to fostering innovation.

Existing ecosystem of tech-related organizations.

Weaknesses:

Challenges in keeping pace with rapid technological advancements.

Potential resistance to change in traditional industries.

Lack of a well-established entrepreneurial culture in some areas.

Opportunities:

Collaboration with national and local governments for policy support.

Access to a talent pool attracted by Daejeon's tech reputation.

Potential for economic growth, job creation, and increased tax revenue.

Integration into international policy trends supporting innovation hubs.

Threats:

Political changes affecting funding and policy support.

Economic uncertainties impacting investment availability.

Cultural and social barriers to entrepreneurship and innovation.

Intense competition with other cities in the region.

3.2 In the Analysis Results

Our strategy to develop policies that advance Daejeon City's UrbanTech hub initiative boasts several advantageous elements. These include the city's robust technological infrastructure, unwavering governmental dedication to fostering innovation, and promising prospects for international partnerships. However, this endeavor encounters its share of challenges, notably the necessity to keep abreast of swiftly evolving technologies and the imperative to retain a talented workforce. To harness the available opportunities and mitigate potential threats, Daejeon should concentrate on fortifying its UrbanTech hub ecosystem, nurturing an innovation-centric environment, and providing ample support for emerging startups. Additionally, fostering open and continuous collaborations with global innovation centers will further solidify Daejeon's standing as a thriving hub for technology-driven urban solutions.

4.1 Vision and Objectives

Vision:

To transform Daejeon Metropolitan City into a pioneering model of Urbantech Hubs, leveraging innovative technology-driven solutions generated by startups to effectively address and overcome urban challenges within its self-governing districts.

Objectives:

Academic-Industry Collaboration: Foster strong partnerships between academic institutions and local industries to create an ecosystem that encourages innovation and knowledge exchange. This collaboration will ensure that academic research translates into practical solutions for urban challenges.

Glocal Initiatives: Develop and implement glocal (global-local) initiatives that connect local industries with global startups, enabling them to collaborate and share expertise. This approach will enrich the local startup ecosystem with global perspectives and solutions.

Foreign Talent Attraction: Create opportunities for foreign talent to establish startups and collaborate with local industries. By attracting international talent, Daejeon aims to infuse diversity and fresh ideas into its Urbantech Hub, making it more dynamic and globally competitive.

Solving Urban Challenges: Utilize the innovations generated by startups to effectively address and solve specific urban challenges within Daejeon's self-governing districts, with a focus on issues like emergency services, population decline, and environmental conservation.

Support for Glocal Startup Professionals: Provide support and resources to academic initiatives that train professionals in the art of glocal startups. This will help bridge the gap between local and global perspectives, enabling startups to navigate the international market effectively.

4.1 Vision and Objectives

To fulfill our proposal based on the objectives established we divide our implementation strategy into 5 Components please refer to the table below.

Table 2. Components and Strategies

Objectives	Strategy	Detail Task
Academic-Industry Collaboration	1. District-Specific Urban Tech Hubs:	Designating Focalized Urban Tech Hubs Funding for Academic Urban Tech Hub Centers Infrastructure reutilization
	2. Startup-Friendly Spaces:	Facilitating the Establishment of Startup-Friendly Facilities
Glocal Initiatives	3. Networking and Collaboration:	Events, Seminars, and Workshops
	4. Global Interconnection:	Creation of a Glocal Promotion Fund

Objectives	Strategy	Detail Task
Foreign Talent Attraction	5. Talent Pool Development:	Talent Pool Development strategy
	6. Supportive Business Environment:	Supportive Business Environment strategy
Solving Urban Challenges	7. Solving Urban Challenges Strategy:	Urban local challenges.
Support for Glocal Startup Professionals	8. Support for Glocal Startup Professionals:	Support for Glocal Startup Professionals strategy

4.3 Contents of Detailed Tasks

Please refer to the following table with the contents of detailed tasks:

Table 3. Detailed Tasks

Detailed Task	Proposed Content
Designating Focalized Urban Tech Hubs	<ul style="list-style-type: none"> Establish dedicated Urban Tech Hubs in each of Daejeon's five districts to address their unique urban challenges. Conduct in-depth analyses of urban issues within each district to identify key pain points and opportunities for improvement. Expand the Scope of local government Subsidy for the creation of infrastructure and places for urban tech hubs
Funding for Academic Urban Tech Hub Centers	<ul style="list-style-type: none"> Partner with universities to establish internship programs that connect students with local startups
Infrastructure Reutilization	<ul style="list-style-type: none"> Identify and repurpose underutilized city infrastructure, such as vacant buildings or spaces, to serve as urban tech hubs that hosts startup incubators and innovation hubs Invest in the development of necessary infrastructure, such as urban spaces, and technology labs (3D printers, servers), to attract and retain startups Collaborate with private sector partners to fund and maintain these spaces, ensuring their sustainability
Facilitating the Establishment of Startup-Friendly Facilities	<ul style="list-style-type: none"> Designate universities and local government offices as spaces where startups can work, collaborate, and access essential resources. Provide co-working facilities, mentorship programs, and access to research facilities to encourage innovation and startup growth. Offer incentives for startups to establish themselves in these designated spaces, such as reduced rent or access to funding opportunities. Increasing Local Government Incentives for Foreign Startups(incentives may include tax breaks, reduced rent for workspace, and access to local resources and support networks)
Events, Seminars, and Workshops	<ul style="list-style-type: none"> Run events, seminars, and workshops to facilitate knowledge sharing, networking, and collaboration among startups, tech hubs, and the local community. Create networking opportunities and events that bring together startups, local government representatives, academic institutions, and potential partners. Focus these events on discussing identified urban challenges and exploring collaborative solutions. Facilitate matchmaking between startups and partners to form teams capable of addressing specific urban issues.

Creation of a Glocal Promotion Fund	<ul style="list-style-type: none"> • Establish strategic connections with cities worldwide sharing similar goals in urban tech innovation • Establish clear guidance and criteria for projects supported by the Glocal Promotion Fund, ensuring that funding aligns with our city's goals and priorities. • Government could collect donations of private companies established in Daejeon. • Government office could provide support to established of the fund • Funds will be allocate to help startups talents to paid salaries and work with local private companies experts
Talent Pool Development Strategy	<ul style="list-style-type: none"> • Develop strategies to attract and retain top talent in the fields of technology, innovation, and entrepreneurship. • Partner with universities to establish internship programs that connect students with local startups. • Promote local job fairs and initiatives to encourage graduates to stay in Daejeon and contribute to the city's innovation ecosystem. • Improving the Migration System for foreign talent Visas • Local government promotion act to support foreign talent visas • Facilitate easier access to the correct visas for foreigners working in tech hubs or startups.
Supportive Business Environment Strategy	<ul style="list-style-type: none"> • Streamline regulatory processes to make it easier for startups to operate and grow in Daejeon. • Offer financial incentives, such as grants and tax breaks, to startups that align with the city's urban innovation goals. • Create mentorship and coaching programs that connect experienced entrepreneurs with startups to provide guidance and support. • Master plan to Enhanced Subsidies and Tax Exceptions • Zero Tax Rate for Welfare-Focused Startups
Urban Local Challenges	<ul style="list-style-type: none"> • Engage local communities, government officials, and stakeholders in the identification and prioritization of urban challenges. • Round tables to discuss with general public about urban issues • Bi annual competitions to address urban challenges with innovation and technology • University and districts collaboration to promote startups creation • One week international program to reclute international startups that work in technology to solve specific urban challenges • Local startup selection based on specific district urban challenges • Local tax exemptions for startups working on urban challenges in Daejeon city
Support for Glocal Startup Professionals Strategy	<ul style="list-style-type: none"> • Provide support and resources to academic initiatives that train professionals in the art of glocal startups. • Bridge the gap between local and global perspectives to enable startups to navigate the international market effectively.

In conclusion, it is essential to emphasize that the strategies outlined in the previous table must be approached with a human-centric design philosophy. These principles underpin the transformation of cities, with a central focus on citizens as the core element. By promoting co-creation with individuals, inclusivity, and the development of a seamless experience, urban innovation initiatives can truly serve the needs and aspirations of the people they are meant to benefit. This approach ensures that the urban tech hubs in Daejeon align with the objectives of fostering collaboration, attracting talent, and addressing urban challenges effectively while keeping the well-being of the community at the forefront of the transformation process.

5.1 Economic Expectations and Benefits

Keywords: increases jobs, attracting investments.

The implementation of urbantech hubs in Daejeon is expected to yield numerous positive economic benefits for the city. These projections are based on experiences from other regions and the potential of technology-driven urban innovation. Here are some economic expectations and benefits, with projections using numbers:

Job Creation: Urbantech hubs can lead to the creation of a significant number of jobs. For instance, based on the example of the ASU Scottsdale Innovation Center in the United States, which fostered \$1.3 billion a year in economic activity by incubating and funding student start-ups (Davis, C., et.al, 2023), we can project that Daejeon's urbantech hubs may generate hundreds to thousands of new jobs.

Increased Wages: With the growth of technology-focused businesses and innovation, higher-paying jobs are expected to be created. The increase in per capita income can range from 10% to 30%, depending on the success and scale of these hubs (Christidis, O., et.al, 2022).

Tax Revenue: A growing economy and higher wages will contribute to increased tax revenue for the city. The specific increase would depend on the number and size of businesses, but it could be in the millions of dollars annually.

Attracting Investments: Cities like New York that have established urban tech hubs have witnessed a notable surge in Venture Capital Investment. In 2021, the city accounted for over one-third of all VC investments in the United States. Daejeon's urbantech hubs are likely to attract significant investments, both from local and international sources. These investments could amount to millions or even billions of dollars over the years.

Innovation Boost: As an illustration, consider Denmark's initiative that launched an urbantech accelerator program between 2019 and 2021. This program successfully brought startups from various corners of the globe together with Danish corporations, all working collaboratively to expedite the development of sustainable cities, one pioneering project at a time. Remarkably, this program has yielded an impressive 13-fold return on investment, meaning that for every 1 euro invested, it has generated an additional 13 euros in value (UrbantechProgram, 2023). These urban tech hubs are poised to cultivate an atmosphere of innovation, consequently spurring the creation of novel technologies and products. This surge in innovation could lead to activities such as patent applications, the establishment of intellectual property, and the forging of technology transfer agreements, potentially contributing with a 13x effect to Daejeon local economy.

Economic Impact: As seen with the St. Louis Cortex, the economic impact of urbantech hubs can be substantial, regulatory and infrastructure policies had generated \$2.1 billion in single-year economic impacts (Davis, C., et.al, 2023). If Daejeon's hubs achieve even a fraction of this success, it could lead to hundreds of millions or even billions of dollars in economic impact.

Small Business Growth: Urbantech hubs often support small businesses. If we follow the example of Cortex, it has been credited with generating \$500 million of investment across nearly 400 companies—85 percent of them small businesses—that have together created 3,800 technology jobs and made the broader St. Louis community a successful innovation ecosystem. If Daejeon follows this trend, it can expect to see significant growth in the number of startups and small enterprises, each contributing to the local economy.

Innovation Ecosystem: In the context of innovation ecosystems, it's worth noting that in the United States, there's a projected

impact from the growth of the structural smart urban economy. This growth is expected to contribute to the development of an innovation ecosystem, with an anticipated and sustainable growth rate of 2.8% by 2026. This is foreseen to lead to an incremental generation of \$10 trillion in GDP over the coming decade. Taking cues from this projection, Daejeon has the potential to evolve into a thriving innovation ecosystem, attracting additional investments and talented individuals. As the local ecosystem matures, it has the opportunity to achieve a comparable 2.8% growth in its GDP by the year 2026.

5.2 Social Expectations and Benefits

Keywords: techhubs, benefits, improve, collaborations, crisis conditions.

Other benefits of creating urbantech hubs are relative to social expectation. The urbantech hubs have the potential to improve organizations by collaborating with larger institutions, searching for new ideas, and enhancing public relations. Social investment policies aimed at promoting social inclusion through human capital development and labor market participation are supported by excluded communities.

Keywords: increased job opportunities, quality of life, increased innovation.

Increased job opportunities: Urbantech hubs are renowned for generating well-paying employment opportunities across a range of sectors, encompassing software engineering, product management, design, and marketing. For instance, the collaboration between UrbanTech NYC and the Mayor's Office of Technology and Innovation provides businesses and entrepreneurs with the opportunity to field-test and showcase their latest innovations across the city. In its efforts to establish New York City as a global epicenter for sustainable urban innovation, UrbanTech NYC has the potential to support a workforce of 3,200 employees (William Gray, 2020). If Daejeon City formulates tailored programs and incentives designed for specific sectors, it has the capacity to establish direct pathways leading to economically sustaining jobs. This proactive approach has the potential to yield thousands of new employment opportunities in the city.

Keywords: reduce inequality, internationalization, hubs, sustainable development.

Improve conditions of the city: The primary role of urbantech hubs is to concentrate efforts on enhancing the quality of life within the city. These hubs offer resources and support to budding entrepreneurs, facilitating the development of innovative solutions rooted in smart technologies to address urban challenges effectively. In Manhattan and Brooklyn, Urbantech NYC is improving the city and supporting new entrepreneurs to find smart technology solutions. If Daejeon continues along this path, it can anticipate a sharp increase in resiliency, sustainability, and equity.

Reduce entry barriers: The City must provide social services to millions of people, from children's public education to senior folks' direct financial support. The contact between the public and city agencies should be effortless. Urbantech hubs can make it easier for the public to benefit from technology. In New York, Rebooting NYC is an Urban Tech Agenda for the Next Administration, a set of strategic recommendations for how the Mayor, City Council, Comptroller, Public Advocate, and Borough Presidents can use new technologies to improve the lives of all New Yorkers. Rebooting NYC proposes a "data locker" system through which New Yorkers can gather their information and share it in a standardized way with multiple agencies and establish a universal approach to applying for services across all City programs. If Daejeon formulates these strategies, it may collect their information, disseminate it uniformly across many Institutions, and create a citywide standard for how to apply for services.

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PART 5.

Correlation of World's First Carbon Negative City and Next Generation Economic Development in Daejeon, South Korea



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I Background and Necessity

Along with slower global economic growth, South Korea in general suffered high unemployment rate, low birth rate and income inequality across various cities. Seoul attracts all the talents from all over South Korea and smaller cities has little opportunities to grow. However, Daejeon has great potential to renovate itself to be a world class city especially in ESG industries considering the R&D hubs, proximity of the location, educated population, world class education and infrastructure.

II Policy Trends

2.1 Domestic Policy Trends of Daejeon, South Korea for Carbon Offsetting

In recent years, Daejeon, a major city in South Korea, has been actively pursuing carbon offsetting policies to address climate change and reduce its carbon emissions. The city has recognized the importance of transitioning to a low-carbon economy and has developed a comprehensive climate action plan that aligns with national and international goals. This plan includes strategies to reduce greenhouse gas emissions through measures such as energy efficiency improvements, the promotion of renewable energy sources, and sustainable transportation initiatives. Daejeon's efforts to develop a sustainable urban environment have also included tree planting and green space initiatives, contributing to carbon offsetting and enhanced quality of life for its residents.

2.2 International Policy Trends of South Korea for Carbon Offsetting

At the national level, South Korea has demonstrated its commitment to carbon offsetting and combating climate change. In 2020, the South Korean government announced its intention to achieve carbon neutrality by 2050, a significant shift in policy that reflects the country's growing concerns about environmental sustainability. This commitment has led to a series of policy initiatives, including the establishment of a carbon market, increased investments in renewable energy sources, and stricter emissions standards for industries. South Korea has also been actively engaging in international climate agreements and cooperation, such as the Paris Agreement, and has pledged to enhance its international efforts to reduce emissions and promote sustainable practices, which indirectly contributes to global carbon offsetting.

2.3 Analysis

The efforts by Daejeon and South Korea in the field of carbon offsetting are indicative of a broader global trend towards addressing climate change. The city of Daejeon's commitment to sustainable urban development and its focus on reducing carbon emissions through local initiatives demonstrates a commitment to mitigating the impact of climate change at the subnational level. Furthermore, South Korea's national-level policies and commitment to carbon neutrality by 2050 underscore the country's recognition of the need for a sustainable and environmentally responsible future.

In the context of international relations and cooperation, South Korea's participation in global climate agreements and initiatives signifies its willingness to collaborate on carbon offsetting strategies with other nations. This engagement is not only essential for achieving national carbon neutrality but also for fostering international partnerships that address the pressing issue of climate change. South Korea's pursuit of carbon offsetting policies reflects a mature understanding of the interconnectedness of climate issues and their potential impact on national security, international diplomacy, and economic stability.

It is essential to recognize that Daejeon and South Korea's domestic and international policy trends in carbon offsetting are reflective of a growing global consensus on the importance of addressing climate change. These policies are not only environmentally responsible but also serve as potential soft power tools in international relations. The successful implementation of carbon offsetting strategies at the subnational and national levels is a significant step towards achieving a more sustainable and secure future, both for South Korea and the international community.

3.1 SWOT Analysis

Introduction

Daejeon has competitive advantages to become the world's first carbon negative city. It has several world class institutions that train the best and brightest of the countries. KAIST (KAIST) is a great example that attract several grant minds to keep coming to Daejeon while other private and public institutions in Daejeon attract thousands of international students to contribute to the local economy.

Strengths:

- 1. Innovation Hub:** Daejeon City shines as a national and global innovation hub, with a cluster of prestigious research institutions and universities, including KAIST (Korea Advanced Institute of Science and Technology). This fosters a culture of cutting-edge technology and research, attracting top talent from across the world.
- 2. Strategic Location:** Nestled in the heart of South Korea, Daejeon boasts a strategic geographic location with excellent transportation infrastructure, including high-speed rail connections, making it a pivotal transit point for business and travelers.
- 3. Sustainability Initiatives:** The city has embarked on impressive sustainability initiatives, promoting green spaces, carbon offsetting, and eco-friendly urban development. These endeavors enhance the city's livability and environmental consciousness.
- 4. Cultural Heritage:** Daejeon offers a rich cultural heritage, with historical landmarks, festivals, and traditions that contribute to its charm, fostering a sense of local pride and attracting tourism.

Weaknesses:

- 1. Economic Disparities:** As in many urban areas, economic disparities may exist, resulting in pockets of inequality, affecting social cohesion and economic stability.
- 2. Traffic Challenges:** The city's rapid population growth and transportation infrastructure may lead to traffic congestion and environmental concerns, potentially hindering productivity and quality of life.
- 3. Air Quality Issues:** Like several South Korean cities, Daejeon occasionally grapples with air quality problems. Addressing air pollution and maintaining a healthy living environment are ongoing challenges.
- 4. Dependence on Research Institutions:** While research institutions are a strength, the city may be overly reliant on them, which could lead to economic vulnerability if funding or interest wanes.

Opportunities:

- 1. Green Technology Leadership:** Daejeon can seize the opportunity to leverage its technological expertise to become a global leader in green and sustainable technology, attracting investments, fostering innovation, and contributing to a cleaner environment.
- 2. Tourism Growth:** The promotion of cultural and historical attractions, along with eco-tourism opportunities, can drive significant economic growth, creating more job opportunities and enriching the local experience.

- 3. Education Hub Expansion:** Daejeon can further expand its education and research sector by attracting more students and researchers, thus contributing to the economy and fostering cultural diversity.
- 4. Collaboration with Neighboring Cities:** Collaborative initiatives with nearby cities can unlock regional development opportunities, shared resources, and collective economic growth.

Threats:

- 1. Climate Change Impact:** Daejeon, like all cities, faces increasing threats from climate change, including extreme weather events, which could disrupt infrastructure, impact residents, and strain resources.
- 2. Economic Shifts:** Global economic shifts or disruptions in technology could affect Daejeon's research-based economy, potentially leading to job losses and economic challenges.
- 3. Competitive Pressure:** Nearby cities may pose competition for the same resources, including investments, talents, and industries, leading to economic rivalry.
- 4. Health Crises:** Recent health crises, such as the COVID-19 pandemic, underscore the vulnerability of cities to public health challenges, emphasizing the importance of strong public health infrastructure and preparedness.

In conclusion, Daejeon City's strengths as an innovation hub and its strategic location present significant advantages, while its commitment to sustainability and cultural heritage enhance its appeal. However, addressing economic disparities, traffic congestion, and air quality issues are key challenges. By capitalizing on opportunities in green technology, tourism, education, and regional collaboration, Daejeon can position itself for a resilient and prosperous future, while simultaneously addressing threats associated with climate change, economic shifts, competition, and health crises.

4.1 Vision and Objectives

* Daejeon to be carbon negative by 2025

4.2 Implementation Strategy and Detailed Tasks

Five Pillars strategies focusing on Economy, Health, Living Standard, Talents and Innovation

Economy

Tax Incentives: Special Tax consideration moving to Daejeon especially ESG industries.

Carbon Credits: subsidized by Korean government and global government.

Green Tech Pioneer: Double down on R&D and transfer projects for commercialization.

Education: Build World Class education system for high school and universities

Entrepreneurship: Dedicated PPP (Public Private Partnership) approach for green businesses to be based in Daejeon

International Projects: Involve in international green projects such as middle east, Africa and the rest of the world.

Health

Air Quality: The city ensures the best air quality

Sport Destination: Attracting people to participate in public sporting events

Food Quality: Food is locally produced and self-sustainable

Sport Facilities: Train World club athletes

Living Standard

PPP: Achieving highest PPP (Purchasing Power Parity)

Affordability: Using the technologies and cost reduction

World Life balance: High income jobs with work life balance

Labor Force: Student Labor Force and foreign traineeship for cost optimization

HDI (Human Development Index) for development

Community builds with kindness and co-existence

Talents

Residency: Fast tracked permanent residency and eventual citizenship for talents

Education: Providing private – styled education for foreign talents to raise the family in Daejeon

Employment: Job creation through PPP (Public Private Partnership) program to attract

ESG: Great environment to start a family without the economic pressure.

Innovation

Smart city 2.0: AI for smart city management

Smart Government 2.0: Digital government 2.0 for one stop service platform bypass the queue

Smart Homes: Energy efficiency

Smart mobility: Full automated mobility

V

Expected Benefits

Our expected benefits are to double the GDP per capita Daejeon by 2027 by creating a city as a hub for global tech transfer of smart cities 2.0.

PART 6.

Using Foreign Talent as Catalysis in Research Spin-offs



| Proposed by |

Syed Turab Haider Zaidi

UST

1.1 Background and Importance of the Initiative

In recent years, there has been increasing pressure on Universities, to shift from mainly teaching and performing research, and adding a TM, portrayed as “a contribution to society”. Universities engaged in TM activities are becoming engines that contribute to the social, economic and cultural development of the regions in which they operate, by transferring knowledge and technologies to industry and to society at large. Simultaneously, academia is facing the challenge of having to demonstrate both its sense of responsibility, and its efficient use of public funding, by introducing strategic management. [1]

Hence the term the so-called third mission of universities is now seen in major articles. This mission calls for the idea that contributes directly to the economic development through a collaboration network between the industry and exploitation of research results [1-2].

There are a number of attractions to the study of spin-offs though, not least the rather iconic role of such examples in the emergence of some new science-based industries. It is also a highly policy-driven topic as governments seek some payback for their investment in university science through commercialization, with spin-offs as a highly visible aspect. Policymakers around the world anticipate the possibility of new technology-based firms emerging from universities and have made changes to intellectual property regulations and to the support for academic entrepreneurship in recent decades.

This whole process needs to identify the need for more work of an interdisciplinary nature, addressing question such as sharing of risks and resources, scaling up and the relationship between the University spin-offs and the ecosystem.

If we focus on the problem we see a lack of opportunities for the foreign researchers to enhance their research skills.

Understanding the Foreign Brain Drain: Why foreigners are leaving? This analysis should consider factors such as job opportunities, administrative challenges, or a lack of access to resources.

Surveys, interviews, and data collection can help in gaining a better understanding of the specific reasons behind the departure of foreign talent. (General discussion was made for this task)

Opinion: Lack of opportunities to pursue further research and expand the research as a

commercial object. Lack of pursuing research independently forces researcher to take further options such as short time Post-Doc or Enter the job market.

1.2 Current Local Issues and Status in Daejeon City

Although organizations like DISTEP and others like Daejeon Sejong Regional Small and Medium Venture Business Administration exist that are targeting ideas like Start-up culture and institutes spread across Daejeon city are recently focusing on foreign talent using program like OASIS

The main challenge is how do you retain the tech-oriented foreign graduates.

Daejeon is a hub for universities like KAIST, CNU, Daejeon Univ., Woosong Univ., Hanbat Univ, etc. Along with them, there is the unique model called UST that grants educational functions to government-funded research institutes (GFRI) and operates only graduate school programs (doctoral, master's, master's and doctoral combined).

What happens to the graduates of these universities and GFRI's ?

Well the answer has three options available in Korea.

- 1) Post-doc in a local university or a GFRI
- 2) Job hunting in a local organization
- 3) Start-up

Although all options are good, challenges and disadvantages exist. First, the post-doc is a temporary research position and the contract can be upto 4-5 years max after which the researcher has to move for the 2nd option or acquire a faculty position.

In the job-hunting case the candidate may or may not have the satisfaction in the work environment such as lack of diversity, research interests, language barrier, contract obligations etc.

If we consider the case of a start-up then clash of interests along with ownership of the technology becomes a legal issue. The person has to produce a new technology in some cases. This can take a large amount of time with some time legal issues and process

The question remains "What happened to the technology the candidate worked on ?". From that aspect the answer seems to be a blank space. When questioning foreign talents, they often state they might pursue ideas in the future or if the same technology is being worked on in a foreign place like Europe, USA or others they might pursue them. From their opinion ownership of the technology is not possible as institutions own the technology. So, based on related

discussions, I see that after completion of a degree a student only takes a Post-doc position in Daejeon or in Korea just so they can target a place outside Korea. This common example is seen be myself in the multiple research campuses of UST. I cannot verify if the same trend is seen in other institutes as my interaction is not with a large group of people.

So, if we look at the bigger picture, it all comes down to one thing: Korea knows how to bring-in the talent, but retaining is the challenge.

After reading this article, I can think of one question. Where are the foreign researchers and what are their contributions?



과학기술정보통신부
Ministry of Science and ICT
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보도자료 *한나라 대한민국*
4차산업혁명의 큰길로 대한민국이 달려갑니다

Ministry of Science and ICT, broke through 1000 INNOPOLIS Research-based Spin-off Companies!

- The 1000th INNOPOLIS Research-based Spin-off Companies have been established in 15 years since the first Kolmar BNH in 2006.
- Total sales of about 739.4 billion won, 3,910 jobs created, and 69.8% survived five years after start-up (as of 2019)

□ Ministry of Science and ICT (Minister Choi Ki-Young, hereinafter "MSIT") and the Korea Innovation Foundation (President, Yang Sung-Kwang, hereinafter "Foundation") announced that the number of Research-based Spin-off Companies, the representative models of public research and commercialization, has surpassed 1,000.

Providing independence to foreign researchers to pursue the research project independently or with parent institution can bring in the valuable skills as well as a quicker commercialization process.

Opinion: This will be suited for the PhD's and Post-Doc's working in the universities as well as GFRI's of Daejeon city. They work on research projects which are maintained and kept under control by the parent institute. Allowing the researchers to work independently on these projects can bring valuable experience and make the commercialization more quickly and achievable.

Example: I am working on the new generation of Ultrasound technology at KIMM. My research project focuses only on the mechanical design of the device Assuming that I have more independence in my research project, then I can bring in collaboration from my connections and focus on parts like Electronics, AI, etc. Doing so the device sees commercialization quickly.

Once commercialized, this can allow the foreign researcher to establish a spin-off while the parent institute can maintain control and authority.

2.1 International Policy Trends

Let's start with this article from Nature and a quote from one of the articles [4]

"The university sees itself as an equal founder together with the academics and the investors."



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Editorial
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The arduous nature of a career in science is not especially suited to the pursuit of business ambitions. Science's raw allure — the intellectual force brought to bear on questions so difficult that no one thought to ask them, much less answer them — selects for a certain type of person. But starting a company demands a suite of skills and attitudes that are far from universal among scientists, from managerial finesse to a flair for building strong and productive relationships.

A substantial proportion of researchers harbour entrepreneurial ambitions. In a survey of *Nature* readers (go.nature.com/2pebit6m), 47% of the 815 people who responded to the question said that they would consider leaving academia to commercialize their research in a start-up company. However, few ever actually do so — a mere 6% of the 1,403 respondents reported having started a company. The greatest perceived barriers were financial risk and insecurity (cited by 72% of respondents) and lack of business skills (53%).

This Outlook presents a portrait of 22 start-up ventures that have emerged from universities around the world to turn laboratory research into practical, profitable products. This eclectic group of initiatives represents just a tiny fraction of the spin-off activity from the world's universities, yet spans a broad range of disciplines, from drug discovery to energy storage, rocket science and structural engineering. Not all have 'succeeded' — many are embryonic, and some have taken tortuous paths and have yet to turn a profit. But together, these stories make it abundantly clear that there are ample commercial opportunities for university research.

We salute these entrepreneurs — and the academic institutions whence they came — for showing so many ways to turn scientific investigation into practical innovations.

Herb Brody
Chief supplements editor

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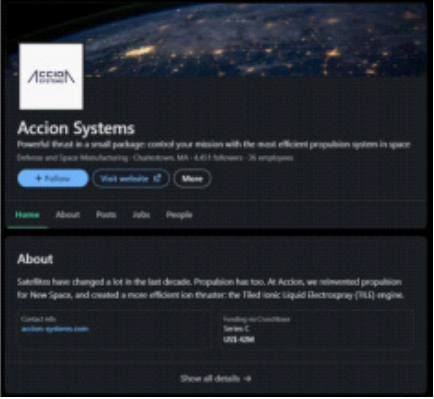
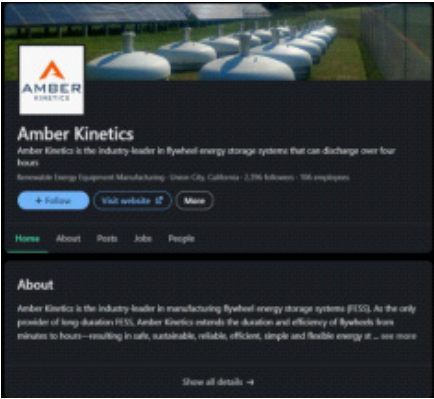
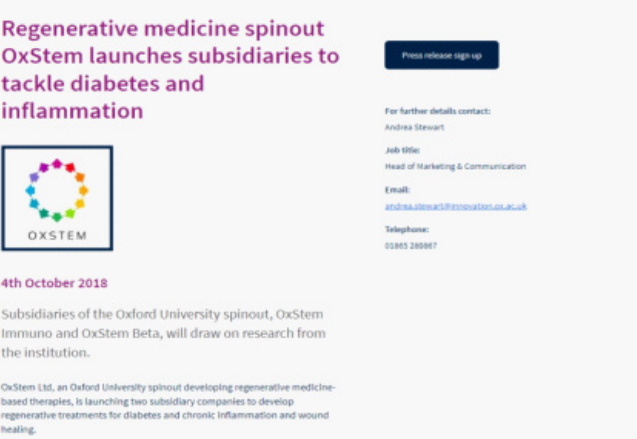
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This Outlook presents a portrait of 22 start-up ventures that have emerged from universities around the world to turn laboratory research into practical, profitable products. This eclectic group of initiatives represents just a tiny fraction of the spin-off activity from the world's universities, yet spans a broad range of disciplines, from drug discovery to energy storage, rocket science and structural engineering [4-9].

Let's first highlight some major success stories found in these articles

Person of interest (University)	Idea	Company
Natalya Bailey (MIT)	Electric space propulsion	 <p data-bbox="1023 696 1182 723">Accion Systems</p>
Seth Sanders (University of California, Berkeley)	Flywheel energy-storage	 <p data-bbox="1023 1167 1182 1193">Amber Kinetics</p>
3 Pioneering scientists (University of Oxford)	Regulating stem cells	

Similarly, more companies can be found in this article at “THE TOP 20 NEWLY FOUNDED UNIVERSITY SPIN-OFFS YOU SHOULD KNOW” [10]

There are several common points in all these outlooks as below:

1. Gaining initial funding and investors were generally more familiar with sciences
2. Research started from an Institution or a University

3. Company has raised X amount of money from a capital funding
4. Projects pitched for programs

A large part of the extant literature considers the ability to combine academic, entrepreneurial and managerial presence as a key driver for the university spin-offs success. university spin-offs are indeed archetypical cases of companies requiring an effective management of the intersection of academic research and industry in order to be successful. These companies are set up to market inventions or scientific discoveries carried out within the university labs, by the means of finding appropriate applications or even building entire markets.

Opinion: Lack of network connections between local services and foreigners

Suggestions: Development of initiatives/resources that can contribute to free and independent research between the foreigner and parent institution.

Let's take an example of an institute in Germany

Home | Transfer | Examples and successes

Spin-offs

New technology-oriented businesses that are based on knowledge constitute a particularly valuable channel for knowledge and technology transfer.

Employees at Helmholtz Centers often form new businesses on the basis of their know-how and license agreements. These spin-offs often sign user agreements that enable them to make use of the Centers' large-scale infrastructure to work on further product development. Sometimes the respective Helmholtz Centers get involved in the new companies. This enables spin-offs to save money on licenses and the use of equipment and lets the Centre participate in the company's growth and commercial success.

Transfer Instruments

HELMHOLTZ

Basic Research Applied Research Application

Technology Readiness Level

1	2	3	4	5	6	7	8	9
▶ CTO-Circle	▶ Start-up Days							
▶ Innovation Fund of the Helmholtz-Centers								
▶ Helmholtz Innovation Labs								
▶ Helmholtz Validation Projects								
▶ Helmholtz Enterprise								

Helmholtz Young Investigator Groups offer internationally outstanding postdoctoral researchers early independence and the opportunity to set up and lead their own research group under excellent conditions at a Helmholtz center. Leaders of Helmholtz Young Investigator Groups are offered a long-term career perspective and tailored leadership training. They work closely with a university partner and have the opportunity to gain teaching experience and the qualifications for a professorship. Young Investigator Groups are funded in all research fields of the Helmholtz Association: energy, earth and environment, health, information, matter, and aeronautics, space and transport.

If we see this example from Germany we see an organization specifically built for this purpose, since the parent institute has access to this funding, we are not suggesting a solution where we ask for money but instead let the researcher become a source of funding from his collaboration and under the umbrella of the parent institute go for a commercialized process. Then based on the success develop a spin-off.

2.2 Domestic Policy Trends

The government has implemented several policy instruments to achieve a visible and satisfactory performance for the enormous investment in public R&D (i.e., government research institutes and universities). The INNOPOLIS Research Institute Spin-off (IRIS) program has now begun to receive considerable attention from public practitioners. IRIS refers to a firm created by public research institutes such as government research institutes (GRIs) or universities within INNOPOLIS that indicate innovation clusters designed by the Special Act on the Support of Special Research and Development Zone. The reason for the recent popularity of the IRIS program is because IRIS firms demonstrate good performance in terms of employment and sales growth. [11]

In the same document a table was found that shows that only about 18% of universities in Korea have created IRIS firms to transfer knowledge to new firms during 2013-2016 as seen below.

Table 1. Annual Number of IRIS Firms Created by Universities from 2013-2015. Source: The INNOPOLIS Foundation (2016)

University	Institution type	2013	2014	2015	Total
Daegu Gyeongbuk Institute of Science and Technology	Research-oriented university	3	6	2	11
Chonnam National University	Public	1	5	5	11
Hanbat National University	Public	0	3	6	9
Kyungpook National University	Public	0	5	2	7
Pukyong National University	Public	0	1	4	5

University	Institution type	2013	2014	2015	Total
Korea Advanced Institute of Science and Technology	Research-oriented university	1	0	4	5
Gwangju Institute of Science and Technology	Research-oriented university	1	0	2	3
Hannam University	Private	0	2	1	3
Pusan National University	Private	0	2	0	2
Sogang University	Private	0	0	2	2
Korea Maritime and Ocean University	Public	0	1	1	2
Hanyang University	Private	0	0	2	2
Chosun University	Private	0	0	2	2
Seoul National University	Public	0	0	2	2
Korea University	Private	0	0	1	1
Dong-a University	Private	0	1	0	1
Yonsei University	Private	0	0	1	1
University of Ulsan	Private	0	0	1	1
Jeju National University	Public	0	1	0	1
Sangmyung University	Private	0	0	1	1
Hanyang University ERICA Campus	Private	1	0	0	1
Annual total		7	23	39	73

The screenshot shows a news article from Yonhap News Agency. The article title is "S. Korea aims to double number of research spin-off firms to 2,000 by 2025". The author is Chae Yun-hwan, and the article was published on October 28, 2020. The article text states that South Korea aims to double the number of research spin-off firms to 2,000 by 2025, creating over 6,000 new positions. It also mentions that in 2005, South Korea introduced a policy to create such firms with an equity investment from state-run research institutes. The article notes that as of last year, there were 891 such research firms in the country that employed a total of 3,910 people, and their total sales reached 739.4 billion won, according to the Ministry of Science and ICT. The new target would lead to a total of 10,000 jobs in research spin-off firms in 2025.

The article includes a section for "Issue Keywords" with tags for #Hangzhou Asian Games, #Yoon Suk Yeol, #football, #KOSPI, and #Biden N Korea. There are also three small image thumbnails with captions: "(Asiad) Main batch of S. Korean delegation heads to Hangzhou", "(LEAD) Yoon meets world leaders in New York for 2nd day to promote Expo bid", and "(LEAD)(Asiad) S. Korea crush".

Let's consider the main point of view in this article [12].

Korea aims to double the number of research spin-off companies to 2,000 by 2025 as part of its New Deal program for job creation. These firms, backed by state-run research institutes, have shown significant growth potential. The government plans to provide financial support and reduce regulations to facilitate their expansion. The goal is to create more jobs and establish top research firms with global technological leadership, aligning with South Korea's vision for an innovation-driven economy.

Some examples of Spin-offs were found using searches such as

- KAERI Spin-Off Company Inngen, Inc. [13].
- Daejeon City built a cooperative system with Sejong City and Chungnam-do to attract a "K-Bio Lab Hub" project commissioned by the Ministry of SMEs and Startups (MSS) [14].
- 와코, 시스웍, 워트 being spin-off ventures from Blue Code Technology [15].

So now from part 1 and 2 it is clear that there is a need to accelerate the creation and growth of research-based spin-off companies by providing comprehensive support, funding, and resources to foreign researchers and innovators, fostering a vibrant innovation ecosystem.

Opinion: Same as above

Suggestions: Same as above

3.1 SWOT Analysis

It is also acceptable to conduct PEST and STEEP analyses in addition to SWOT.



4.1 Vision and Objectives

Vision

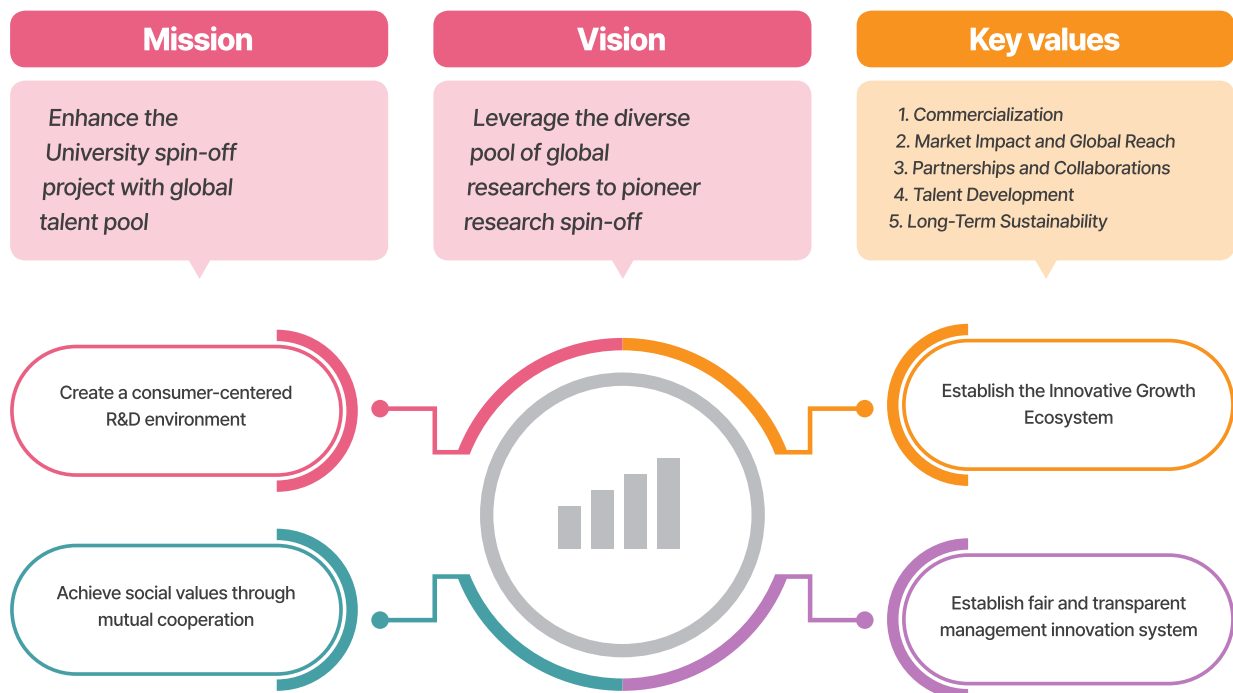
To leverage the diverse pool of global researchers in Daejeon city and through the locally available cutting-edge technology pioneer research spin-offs, innovative solutions and catalyzing the positive change in the industries to meet the local and global demands.

Hence the team name Catalyst Crew.

Objectives

1. Commercialization
2. Market Impact
3. Global Reach
4. Partnerships and Collaborations
5. Talent Development
6. Long-Term Sustainability

4.2 Implementation Strategy and Detailed Tasks



4.3 Contents of Detailed Tasks



Challenges and Suggestions

Step 1:

Regulatory Complexity: Potential complexities in intellectual property, licensing, and compliance may pose challenges.

Solution: Simplify Intellectual Property (IP) and licensing procedures.

Step 2:

Funding Dependence: The policy relies on consistent funding, and fluctuations may affect the sustainability of spin-off companies.

Solution: Diversify funding sources. Reduce dependence on a single funding channel by exploring alternative funding options.

Step 3:

Talent Retention: Challenges in retaining foreign talent over the long term may limit policy impact.

Solution: Offer tailored support programs. Develop retention programs that cater to the unique needs and aspirations of foreign talent.

Step 4:

Academic Engagement: Success depends on the level of engagement and commitment of parent institutions.

Solution: Incentivize academic participation.

5.1 Economic Expectations and Benefits

From my understanding:

1. Job Growth with foreign recruitments
2. GDP Contribution
3. Investment Magnet
4. Export Expansion
5. Technological Leadership

5.2 Social Expectations and Benefits

1. Increased Revenue and Resources
2. Knowledge Economy Reinforcement
3. Industry Diversification
4. Global Recognition
5. Innovation Culture

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GLOBAL
INNOVATION



PART 7.

International Student Employment Integration Program (ISEIP)



I Proposed by I

Spancer Msamadya

Hanbat National Univ.

1.1 Background and Importance of the Initiative

The International Student Employment Integration Program (ISEIP) addresses the challenges faced by academically successful international students in South Korea by facilitating their integration into the local workforce. Recognizing the background of high academic achievement but limited integration opportunities, ISEIP aims to harness the economic, cultural, and global potential of international talent. This initiative is vital for enhancing South Korea's economic growth through increased tax revenue and job creation, enriching its cultural diversity, bolstering global competitiveness, and fostering social cohesion. Ultimately, ISEIP bridges the gap between academic excellence and successful career development for international students while promoting a more inclusive and prosperous South Korea.

1.2 Current Local Issues and Status in Daejeon City

Academically successful students in Daejeon face the dilemma of leaving behind their promising careers upon completing their studies, often requiring practical hands-on training in their respective fields to contribute effectively to their home countries. Access to South Korea's advanced industry and working culture can be a catalyst for global advancement. The central issues demanding immediate attention for successful integration are:

Work Authorization and Visas: Streamline work authorization and visa procedures to make it easier for international students to stay and work in Daejeon after graduation, eliminating barriers to employment. Currently, the visa and immigration regulations are very complex for students to maintain their legal status during the job search process.

Entrepreneurship Opportunities: While South Korea has shown commitment to fostering entrepreneurship among international students through initiatives such as mentorship programs, incubators, and funding opportunities, there exists a significant gap in accessibility. Many students find it exceptionally challenging to access these valuable resources and funding, limiting their ability to fully benefit from the policy's intended support for aspiring entrepreneurs.

Networking and Industry Connections: While efforts have been made to facilitate connections between international students and local professionals or businesses through networking events, job fairs, and industry-specific gatherings, it's crucial to acknowledge that these opportunities are still limited in scope. There is a pressing need to enhance and expand the facilitation of such connections to provide international students with broader and more accessible avenues for establishing local networks.

Feedback Mechanisms: To enhance the overall integration experience and further Daejeon City's global competitiveness and cultural diversity, it's crucial to establish effective feedback channels that empower international students to provide input and insights. These channels will enable the development of tailored initiatives that can address the unique needs and challenges of international students, ensuring their voices contribute to the continuous improvement of integration programs.

II Policy Trends

2.1 International Policy Trends

Several developed countries have recognized the value of academically successful international students in bridging workforce gaps, benefiting both the students by gaining valuable work experience and the host country by addressing labor needs. To illustrate this trend, we can highlight the cases of the USA, UK, Australia, and Canada as examples of countries that have successfully leveraged international student talent for economic growth and workforce development.

1.2 Current Local Issues and Status in Daejeon City

Academically successful students in Daejeon face the dilemma of leaving behind their promising careers upon completing their studies, often requiring practical hands-on training in their respective fields to contribute effectively to their home countries. Access to South Korea's advanced industry and working culture can be a catalyst for global advancement. The central issues demanding immediate attention for successful integration are:

UNITED STATES: Optional Practical Training (OPT): The U.S. has a well-established OPT program that allows international students to work in their field of study for up to 12 months after graduation, with an additional 24-month extension for STEM (science, technology, engineering, and mathematics) graduates.

H-1B Visa Cap Reforms: The U.S. government has been considering reforms to the H-1B visa program to make it more accessible to international students with advanced degrees from U.S. institutions.

Entrepreneurship Opportunities: Some states in the U.S. have launched programs that allow international students to start and operate businesses while on their student visas, promoting entrepreneurship and economic growth.

UNITED KINGDOM: Post-Study Work Visas: The UK reintroduced the Post-Study Work Visa (Graduate Route) in 2020, allowing international students to work, seek employment, or start their own businesses in the UK for up to two years after completing their studies (or three years for PhD graduates).

Start-up and Innovator Visas: The UK offers visas designed to support international students with entrepreneurial ambitions, such as the Start-up Visa and Innovator Visa, which allow graduates to establish and grow businesses in the UK.

CANADA: Post-Graduation Work Permits (PGWPs): Canada offers generous PGWPs, allowing international students to work in Canada for up to three years after graduation, depending on the length of their program. PGWPs facilitate the transition from studying to working in Canada.

Express Entry Pathways: Canada's Express Entry system gives international students an advantage when applying for permanent residency, recognizing their Canadian education and work experience as valuable assets.

AUSTRALIA: Temporary Graduate Visa (subclass 485): Australia offers a Temporary Graduate Visa that allows international students to work in Australia temporarily after completing their studies. The duration of the visa depends on the level of qualification obtained. **Skilled Migration Pathways:** Australia has various skilled migration pathways that recognize international students' qualifications and work experience, making it easier for them to obtain permanent residency.

3.1 SWOT Analysis

Strengths:

- 1. Reputable Educational Institutions:** The presence of renowned universities, colleges, and schools is a significant strength. High-quality academic institutions with strong international rankings can attract foreign students seeking a world-class education.
- 2. Diverse and Inclusive Environment:** Daejeon is known for its cultural diversity and inclusivity is appealing to foreign students. It is a welcoming and tolerant atmosphere that makes international students feel at home.
- 3. Scholarships and Financial Aid:** The availability of scholarships, grants, and financial aid programs for international students is a major strength. This reduces the financial burden and encourages foreign students to choose the city for their education.
- 4. Employment Opportunities:** A city with a strong job market and opportunities for internships or part-time work for students can be a significant strength. Many international students are looking to gain work experience while studying.
- 5. Safety and Low Crime Rate:** Safety is a top priority for international students and their families. A low crime rate and a reputation for safety can be a strength in attracting foreign students.
- 6. Support Services for International Students:** Cities that offer support services such as international student offices, housing assistance, and cultural integration programs can make the transition for foreign students smoother.
- 7. Quality of Life:** High quality of life indicators, including healthcare, transportation, and affordable cost of living, can be attractive to international students.

Weaknesses:

- 1. Limited Access:** Some students may find it challenging to access the program's resources, such as mentorship, funding for entrepreneurship, or networking opportunities, hindering their full participation.
- 2. Language Barrier:** The primary language in South Korea is Korean, and international students who are not fluent may struggle to communicate effectively in the workplace, limiting their job prospects.
- 3. Recognition of Foreign Credentials:** Employers may not fully understand or recognize qualifications obtained by international students from foreign institutions, potentially limiting job opportunities.
- 4. Limited Post-Study Work Opportunities:** If the city does not offer attractive post-study work opportunities, including work visas, international students may be less inclined to stay and work after completing their degrees.
- 5. Limited Cultural and Recreational Activities:** A city with limited cultural and recreational activities may be less attractive to students seeking a holistic experience that includes cultural enrichment.

Opportunities:

- 1. Globalization of Education:** The increasing trend of internationalization and globalization in education provides an opportunity for cities to attract students from diverse backgrounds.

- 2. Bilateral Agreements and Partnerships:** Collaborative agreements and partnerships between the city's educational institutions and institutions in other countries can facilitate student exchange programs and attract international students.
- 3. Entrepreneurship Support:** Strengthening support for entrepreneurship, including easier access to funding and mentorship, can encourage international students to launch businesses in South Korea.
- 4. Emerging Markets:** Targeting emerging markets with growing middle-class populations seeking education abroad can be an opportunity for cities to expand their international student base.
- 5. Government Initiatives:** Supportive government policies, such as incentives for international students and simplified visa procedures, can create opportunities for cities to attract more foreign students.
- 6. Research Opportunities:** Highlighting research opportunities, partnerships with industries, and access to cutting-edge technology can attract graduate students looking for research-focused programs.
- 7. Networking and Alumni Connections:** Promoting networking events and alumni connections can help international students build professional networks and connections for their future careers.
- 8. Collaboration with Local Businesses:** Collaborating with local businesses and industries to offer practical training and job opportunities for international students can make the city more attractive.

Threats:

Perception of Discrimination: Any perceived discrimination or hostility toward international students can negatively impact a city's reputation and its ability to attract and retain foreign students.

Visa and Immigration Policy Changes: Changes in visa and immigration policies, including stricter regulations or restrictions on post-study work visas, can deter foreign students.

Competing Cities: Other cities or countries with strong educational systems and attractive policies can pose a threat by offering stiff competition for international students.

Competing Countries: South Korea competes with other countries for international students and their talent. Changes in policies or marketing strategies by other nations can affect South Korea's ability to attract and retain international students.

4.1 Vision and Objectives

The vision for the International Student Employment Integration Program (ISEIP) in Daejeon is to create a vibrant and inclusive ecosystem where international students are seamlessly integrated into the local workforce and community. This vision encompasses several key elements:

- 1. Global Talent Hub:** Daejeon aspires to become a recognized global talent hub, attracting diverse and highly skilled international students from around the world.
- 2. Cultural Exchange and Diversity:** The policy envisions a rich cultural exchange where international students and local residents learn from one another, fostering diversity and inclusivity in the community.
- 3. Workforce Enhancement:** By successfully integrating international students into the local workforce, Daejeon aims to enhance its workforce's capabilities and competitiveness on a global scale.
- 4. Innovation and Entrepreneurship:** The policy envisions international students as contributors to innovation and entrepreneurship, creating startups and participating in cutting-edge research and development.
- 5. Economic Growth:** Daejeon aims to leverage the talent and contributions of international students to bolster its economic growth, attract investments, and promote sustainable development.
- 6. Global Reputation:** The successful implementation of ISEIP will enhance Daejeon's reputation as a welcoming and forward-thinking city, further attracting international talent and businesses.
- 7. Community Integration:** The vision includes seamless integration of international students into the local community, where they feel at home, supported, and valued.
- 8. Career Success:** Ultimately, the vision is for international students to achieve their career goals and aspirations in Daejeon, contributing their skills, knowledge, and cultural diversity to the city's prosperity.

Overall, the vision for ISEIP in Daejeon is to create an environment where international students not only receive a quality education but also find ample opportunities to build successful careers, contribute to the local economy, and become active members of the community. This vision aligns with the broader goal of enhancing Daejeon's global competitiveness and cultural diversity.

4.2 Implementation Strategy and Detailed Tasks

Implementing the strategy for the International Student Employment Integration Program (ISEIP) in Daejeon involves a coordinated effort among various stakeholders, including educational institutions, government bodies, local businesses, and international students themselves. Here's a step-by-step plan for implementation:

1. Establish a Coordinating Body:

Create a dedicated coordinating body or committee comprising representatives from educational institutions, government

agencies, local businesses, and international student organizations. This body will oversee the strategy's implementation.

2. Needs Assessment:

Conduct a thorough needs assessment to understand the specific challenges faced by international students in Daejeon. Gather data through surveys, focus groups, and consultations with students.

3. Policy Development and Enhancement:

Based on the needs assessment, review and enhance existing policies and programs or develop new ones that address the identified challenges and opportunities.

4. Outreach and Awareness:

Launch a comprehensive outreach and awareness campaign to inform international students about the available policies and programs. This campaign should utilize multiple communication channels, including websites, social media, informational sessions, and dedicated staff.

5. Cultural Sensitivity Training:

Offer cultural sensitivity training programs to both local professionals and employers and international students to bridge cultural gaps and promote an inclusive work environment.

6. Language Support:

Strengthen language support programs to improve international students' proficiency in the local language. This may include language classes, conversation partners, and language immersion experiences. In fact make language classes compulsory for all students.

7. Networking Opportunities:

Organize regular networking events, job fairs, and industry-specific gatherings to facilitate connections between international students and local professionals and businesses.

8. Financial Support:

Develop financial assistance programs or scholarships to help alleviate financial burdens, especially related to housing and living costs.

9. Mentorship Programs:

Establish mentorship programs that pair international students with local professionals who can provide guidance on career development, job search strategies, and workplace culture.

10. Career Counseling:

Enhance career counseling services to assist international students in setting career goals, developing job search skills, and understanding the local job market.

11. Feedback Mechanisms:

Implement feedback mechanisms that allow international students to provide input on the policies and programs, ensuring their voices are heard and considered for program improvement.

12. Collaboration with Local Businesses:

Strengthen partnerships with local businesses and industries to increase awareness of the benefits of hiring international graduates and encourage their active participation in the program.

13. Legal and Immigration Support:

Provide comprehensive support for international students in navigating visa and immigration regulations, ensuring they maintain legal status during their studies and job searches.

14. Post-Graduation Support:

Extend support services beyond graduation by helping international students find relevant employment opportunities, including internships and entry-level positions.

15. Monitoring and Evaluation:

Continuously monitor the effectiveness of the strategy by collecting feedback from international students, local employers, and program administrators. Make necessary adjustments based on the results.

16. Long-Term Sustainability:

Ensure the long-term sustainability of the strategy by securing funding, maintaining strong partnerships, and regularly reviewing and updating policies and programs.

17. Cultural Events and Exchanges:

Promote cultural events and exchanges that encourage interactions between international students and the local community, fostering mutual understanding and respect.

18. Research and Data Collection:

Conduct ongoing research and data collection to track the impact of the strategy on international student integration, workforce development, and the local economy.

19. Advocacy and Promotion:

Advocate for the benefits of international student integration to local businesses, industries, and the wider community to garner support and participation.

20. Scaling and Expansion:

Once the strategy proves successful, consider scaling and expanding it to other cities or regions within South Korea.

Implementing this strategy will require a commitment to collaboration, continuous improvement, and a long-term vision for the successful integration of international students into Daejeon's workforce and community.

4.3 Contents and Detailed Tasks

(1) Establishing a dedicated coordinating body

Establishing a dedicated coordinating body or committee is a critical step in the implementation of the International Student Employment Integration Program (ISEIP) in Daejeon. This body serves as the central authority responsible for planning, executing, and monitoring the various components of the program. Here's an explanation of its composition and roles:

Composition of the Coordinating Body:

Educational Institutions: Representatives from universities, colleges, and educational institutions in Daejeon should be part of the coordinating body. These representatives can include university administrators, faculty members, or international student advisors.

Government Agencies: Officials from relevant government departments and agencies, such as the Ministry of Education, the Ministry of Foreign Affairs, or immigration authorities, should be included. They bring regulatory expertise and can help streamline visa and work authorization processes.

Local Businesses: Representatives from local businesses, including HR managers or business owners, should be involved to ensure that the program aligns with the needs of the local job market.

International Student Organizations: Leaders or representatives from international student organizations should participate to provide the perspective and input of the students who will benefit from the program.

By creating a coordinating body with representatives from various sectors, Daejeon can ensure that the ISEIP is a collaborative effort that addresses the diverse needs of international students, local businesses, and the community as a whole. This central authority serves as a hub for communication, decision-making, and effective program management.

(2) Work authorization and visas

To ensure a smoother process for international students regarding work authorization and visas, the coordinating body must establish an institution-based assessment system. This system aims to streamline work authorization and visa procedures, ultimately making it more convenient for international students to stay and work in Daejeon after their graduation. The current visa and immigration regulations are often overly complex, creating significant challenges for students as they navigate the job search process while maintaining their legal status. By introducing an institution-based assessment system, Daejeon can simplify these procedures and remove unnecessary barriers to employment for international students. This proactive approach will contribute to a more welcoming and supportive environment, encouraging talented graduates to contribute their skills to the local workforce and community.

(3) Entrepreneurship opportunities

To enhance accessibility to entrepreneurship opportunities for international students in Daejeon, an institution-based approach is recommended. Educational institutions should establish a centralized online hub for entrepreneurship resources and streamline application processes. Dedicated support staff within institutions can guide students, while awareness campaigns and accessible workspaces can promote entrepreneurship. Expanding mentorship, funding assistance, and networking events, in collaboration with local businesses, can facilitate students' entrepreneurial journeys. Continuous evaluation and sustainability efforts, coupled with legal support, will create an inclusive and supportive environment, ensuring international students can fully benefit from entrepreneurship initiatives.

(4) Networking and industry connections

To improve networking and industry connections for international students in Daejeon, a multifaceted implementation plan is recommended. This plan includes hosting diverse networking events, job fairs, and professional development workshops, both in-person and online, to cater to various fields of study. Mentorship programs and industry-specific panels, along with collaboration with local businesses for workplace visits, can further facilitate connections. Encouraging student organizations

to host their networking events fosters a sense of community. Continuous feedback collection from students ensures program effectiveness, while integrating networking into curricula and establishing career resource centers enhances students' access to professional development opportunities. This comprehensive approach aims to provide international students with broader and more accessible avenues for establishing local networks, aiding their successful integration into Daejeon's workforce and community.

(5) Effective feedback mechanism

To implement effective feedback mechanisms for international students in Daejeon, a multi-pronged approach is necessary. This includes creating online feedback portals, conducting regular surveys, organizing focus groups, and appointing student representatives to facilitate open communication. Hosting feedback events and providing dedicated hotlines further promote real-time engagement. The collected feedback should be systematically analyzed and categorized, leading to the development of actionable plans. Continuous evaluation and follow-up feedback loops ensure that adjustments are made as needed. Additionally, cultural competency training for staff and administrators is vital to understanding and addressing international students' unique needs. Recognizing and appreciating students' contributions and successes resulting from their feedback underscores the importance of their voices in enhancing Daejeon's global competitiveness and cultural diversity.

5.1 Economic Expectations and Benefits

The integration of international students into the local workforce and entrepreneurship initiatives can bring significant economic benefits to a country like South Korea, particularly in cities like Daejeon. Some of the expected economic benefits include:

- 1. Innovation and Entrepreneurship:** International students who engage in entrepreneurship can establish new businesses, drive innovation, and create jobs. This entrepreneurial activity can lead to economic growth and increased competitiveness.
- 2. Increased Consumer Spending:** As international students live and study in South Korea, they contribute to local economies by spending on housing, transportation, food, and other goods and services, boosting the local retail and hospitality sectors.
- 3. Education Sector Revenue:** Revenue generated from international student tuition fees contributes to the financial sustainability of educational institutions.
- 4. Long-Term Economic Growth:** Over time, the economic benefits of international student integration can lead to sustainable economic growth for both Daejeon City and South Korea as a whole.

5.2 Social Expectations and Benefits

The social expectations and benefits of integrating international students into the local community in Daejeon City are multifaceted and include:

- 1. Skilled Labor Force:** International students, often possessing diverse skill sets and educational backgrounds, contribute to the local labor market by filling skill gaps and addressing labor shortages in specific sectors.
- 2. Talent Retention:** Encouraging international students to stay and work in South Korea post-graduation retains talent within the country. These graduates contribute to the workforce, paying taxes, and bolstering economic productivity.
- 3. Global Reputation:** Fostering a welcoming environment for international students can improve South Korea's global reputation as a destination for education and career opportunities, attracting more students in the long term.
- 4. Networking and Trade:** Building international networks through international students can lead to stronger trade relations and business connections with their home countries, potentially opening up new markets.

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Policy Proposal for Daejeon

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