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Policy for Human Resource Development for Innovation Center in Bac Ninh Province, Vietnam

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Abstract

In the knowledge economy, there is a need to develop self-managed and high-performance human resource teams (SMFT) to implement consulting projects from state, national and global organizations. In this research, a case study was presented on the initiatives of high-performance teams in implementing human resource programs at diverse national and global innovation centers under various ministries and International Development Agency (IDA) such as Asian Development Bank, UNDP, UNESCO, USAID and World Bank. The Bac Ninh Provincial Innovation Center (incubator, start-up, creative start-up, technical base supporting supporting and high-tech industries, co-working space supporting enterprises) invested by the Department of Planning and Investment with a total investment of nearly 500 billion VND is located in the Information Technology Park of Bac Ninh province. The Bac Ninh Provincial Innovation Center was established to

create a favorable, healthy, equal, stable and safe investment and business environment for enterprises; focusing on supporting, "nurturing" and "incubating" small and medium-sized start-ups, creative start-ups, and newly established enterprises to develop into enterprises with sufficient capacity to compete in the market. In addition, continuing to accompany enterprises, improving the effectiveness of resolving difficulties and obstacles for enterprises, reforming administrative procedures in the direction of reducing the time to enter the market, reducing the time to carry out administrative procedures, gradually increasing the proportion of added value of Vietnamese enterprises in the supply chain for Samsung Complex, the largest FDI enterprise in Bac Ninh province at present. Therefore, the author chose the topic of the article: Human resource development policy for the Innovation Center in Bac Ninh province, Vietnam.

Keywords: Human Resource Development, Innovation, Bac Ninh, Supply-demand Approach

1. Introduction

The United Nations Economic and Scientific Organization (UNESCO) selected the Institute as an Associate Centre of the Programme for Educational Innovation for Asian and Pacific Development (APEID) in 1978. The Institute also became an Associate Centre of the Colombo Plan for Technical Education (CPSC), Singapore. Further, based on the United Nations Development Programme (UNDP), Engineering Education Research, Multimedia and Evaluation of Engineering Programmes have been incorporated into teacher training. Most of the state governments and local industries have approached the Institute for training of their staff. To date, no Engineering Consultancy Centre has been established nor has a Human Resource Development (HRD) Programme Implementation Unit been established. Even the continuing education unit established in 1989 on the initiative of MHRD has been closed after six years of operation.

With the globalisation of the Indian economy, foreign direct investment (FDI) is pouring into various manufacturing sectors, requiring Indian engineering education to cater to the needs of India by training and developing engineering teachers, corporate executives and polytechnic faculty from over 90 developing countries. They need more support to implement their models in their countries. There is no dedicated and formal institute that can offer short-term courses, long-term training programmes and undertake industry-relevant curriculum development, development of instructional materials and interdisciplinary research in Engineering Education. Although the institute was established to develop polytechnic teachers, later on due to the demand from industry and international agencies, the need for a centre of innovation in engineering education and human resource development began to increase. Due to rigid policies of the administrators, growth is severely restricted and the department

faces numerous problems. Following are some of the challenges arising due to knowledge-based economy.

From a purely agricultural province, Bac Ninh has now basically become a modern industrial province, making an important contribution to the overall growth of the country. Attracting foreign investment ranks 7th in the country with 1,908 projects, total investment capital of more than 24.17 billion USD from 39 countries and territories, focusing on the fields of smart manufacturing, digital technology industry, high technology, with many large projects of international brand investors such as Samsung, Amkor, Canon, Foxconn.

Bac Ninh province identifies manufacturing and processing industry as key, digital transformation is a new breakthrough method to shorten the industrialization and modernization process, Bac Ninh builds a provincial planning with a vision to become a leading center of innovation and research and design (R&D) in Southeast Asia by 2050. Focus on high-tech production, smart production, aiming to develop into a high-value international digital service center; a smart city with global access and integration, with leading education, training and healthcare services... Strive to build Bac Ninh into a city with modern, high-tech industry by 2030, meeting the requirements of a centrally-run city; a driving force for the development of the Northern Key Economic Zone, the Capital Region and the whole country; by 2045, Bac Ninh will be a high-tech, smart industrial city.

To realize that goal, along with promoting innovation in local development policies, in domestic and international forums, Bac Ninh has always proactively connected, shared, and sought contributions from experts, scientists, investors, and businesses to help the province accelerate its transformation towards developing smart and sustainable production. Recently, within the framework of the Industry 4.0 forum in 2023, many recommendations from managers and experts have suggested and helped the province clear its vision towards the goal of rapid and sustainable development in the future. In particular, the Head of the High-Tech Park Management Board recommended: To turn Bac Ninh into an innovation center, the human factor is the most important. With its strength as a production center, Bac Ninh needs to focus on innovation in processes, cooperate with localities and FDI enterprises to move faster in improving the value chain. Special attention should be paid to training and attracting high-quality human resources; There are stronger policy mechanisms to attract talents to Bac Ninh such as personal income tax policy.

With the reason for choosing the detailed article topic as above, this study aims to propose policies to promote the development of open innovation human resources in Bac Ninh, contributing to improving business efficiency and sustainable development of enterprises as well as the local economy of Bac Ninh, contributing to the strategy and goal of becoming a comprehensive innovation province in the future.

2. Theoretical Basis and Research Model

2.1 Some concepts

Open innovation is a concept introduced by Henry Chesbrough in the early 2000s. According to Chesbrough (2003)^[9], open innovation is a method by which organizations tap resources and ideas from both inside and outside the organization to drive the development of new

products, services, and processes. The main components of open innovation include:

Internal and external resources: Use both resources and ideas from within and outside the organization (Chesbrough, 2003)^[9].

Sharing and collaboration: Inter-organizational collaboration and knowledge sharing to develop new solutions (Chesbrough, 2006)^[17].

Process and business models: Applying different innovation models and managing the process from research and development to commercialization (Chesbrough & Crowther, 2006)^[19].

Knowledge management and protection: Ensuring intellectual property rights and knowledge management to support innovation (Chesbrough, 2003)^[9].

▪ **Technology and digitalization:**

The development of digital technology, artificial intelligence and big data analytics has promoted open innovation (Chesbrough & Rosenbloom, 2002)^[20].

The development and maturity of digital technologies such as artificial intelligence (AI), big data analytics (Big data), Internet of Things (IoT), Blockchain, cloud computing have had a profound impact on open innovation. Digital technologies and digital platforms enable companies to connect and collaborate with global partners and communities more easily and effectively. Artificial intelligence and big data analytics help analyze and process huge volumes of data to detect trends, predict needs and optimize innovation processes.

Digital technology: Platforms such as social networks, online communities, and online collaboration tools facilitate knowledge sharing and collaboration in open innovation. Companies can access ideas and technologies from around the world, increasing the speed and efficiency of the innovation process (Chesbrough & Rosenbloom, 2002)^[20].

Artificial Intelligence (AI): AI aids in data analysis, pattern detection, and process optimization. It can automate innovation processes, helping to rapidly discover and develop new solutions (Chesbrough & Rosenbloom, 2002)^[20].

Big data analytics: Using big data analytics helps companies better understand customer behavior, market trends, and product performance, thereby making more accurate and effective innovation decisions (Chesbrough & Rosenbloom, 2002)^[20].

Expanding international cooperation:

Organizations increasingly collaborate internationally to take advantage of global knowledge (Chesbrough, 2003)^[9].

Organizations are increasingly looking to expand international cooperation to leverage knowledge and technology from global markets. International cooperation not only helps companies access new resources and knowledge, but also creates opportunities to expand markets and reduce risks to technology and sustainable development.

International collaboration: Organizations are building international collaboration networks with partners in different countries to share knowledge, resources, and technology. This collaboration helps companies access advanced technologies and diverse market insights (Chesbrough, 2003)^[9].

Leveraging global knowledge: Companies can tap into knowledge from global markets to develop products and services that meet global needs and trends, and improve

their competitiveness in international markets (Chesbrough, 2003)^[9].

Startups and innovation ecosystems:

Startups and innovation ecosystems play an increasingly important role in open innovation (Chesbrough, 2006)^[17]. Large companies often partner with technology startups to take advantage of the rapid innovation and creativity in small companies and groups of young, energetic and creative people.

The role of startups: Startups apply technology to bring new creative solutions, with the ability to innovate quickly and flexibly. Large enterprises in the world often cooperate with startups through incubation and acceleration programs, with the participation of venture capital funding from investment funds, and strategic alliances to explore and develop creative solutions (Chesbrough, 2006)^[17].

Innovation ecosystems: Innovation ecosystems include incubators, and support networks that connect companies, investors and venture capital funds, and research institutes and universities. These ecosystems facilitate collaboration and knowledge sharing, contributing to the promotion of open innovation (Chesbrough, 2006)^[17].

Sustainable innovation and social responsibility:

Companies are looking for sustainable and socially responsible solutions (Chesbrough & Bogers, 2014)^[18]. Companies are increasingly focusing on developing innovative sustainable and socially responsible solutions. This not only helps to solve environmental and social problems but also enhances the image and value of the company.

Sustainable innovation: Companies are looking to develop sustainable products and processes to minimize negative impacts on the environment. Sustainable innovation includes using recycled materials, reducing emissions, and developing environmentally friendly products (Chesbrough & Bogers, 2014)^[18].

Social Responsibility: Companies also focus on social responsibility by ensuring that their operations benefit the community and society. This includes implementing community projects, supporting social development programs, and ensuring fair working conditions (Chesbrough & Bogers, 2014)^[18].

Support from government and organizations:

Governments and international organizations increasingly provide support and incentives for open innovation through policies, funding programs, and innovation support initiatives. These policies help facilitate the development and deployment of innovative solutions (Chesbrough, 2006)^[17].

Supportive policies: Governments provide policies and regulations that support innovation, including creating legal frameworks that facilitate knowledge sharing and protection of intellectual property rights (Chesbrough, 2006)^[17].

Funding programs: Funding programs and research funds from governments and international organizations provide companies and organizations with additional resources to carry out innovation projects (Chesbrough, 2006)^[17].

Innovation Support Initiatives: Organizations and governments also encourage innovation initiatives through organizing innovation competitions, workshops and networking events to promote collaboration and knowledge sharing (Chesbrough, 2006)^[17].

2.2 Some models of innovation research

a. Collaborative Model:

Collaborating with partners: SMEs collaborate with companies, research organizations, or research institutes to jointly develop new products or solutions (Chesbrough, 2003)^[9].

Partner networks: Participate in industry networks or clusters to exchange knowledge and technology (Chesbrough, 2006)^[17].

b. Crowdsourcing model:

Gathering ideas from a large community or customers to develop new products or services (Howe, 2008)^[34].

Solution Crowdsourcing: Inviting the community or experts to contribute solutions to specific problems faced by the business (Brabham, 2013).

c. Innovation Funding Model:

Venture capital: Participate in venture capital or innovation funds to raise capital for innovative projects (Chesbrough, 2012)^[32].

Support programs: Take advantage of government or nonprofit support programs for innovation (Miller, 2014).

d. Customer innovation model:

Customer Consulting: Conduct surveys and research to collect opinions and feedback from customers about products or services (Von Hippel, 2005)^[33].

Custom development: Developing products or services according to customers' specific requirements, customizing them to fit their needs (Sawhney, Wolcott, & Arroniz, 2006).

e. Experimentation and Development model:

Develop a team of innovators: Create small teams or innovation labs to test new ideas and develop new business models (Blank, 2013)^[3].

Pilot programs: Implement pilot programs to evaluate the feasibility and effectiveness of innovative solutions (Ries, 2011).

f. Technology Licensing and Acquisition:

Patent acquisition: Acquiring or licensing technology from other companies for integration into a firm's products or services (Arora & Gambardella, 1994).

Licensing negotiations: Negotiating and licensing the use of other partners' technology to save development costs and time (Jensen & Thursby, 2001).

g. Internal Innovation Model:

Innovation Incentive Programs: Create programs that encourage and motivate employees to participate in the innovation process (Tushman & O'Reilly, 1996)^[31].

Process improvement: Applying process improvement methods and technology to improve efficiency and product quality (Bessant & Tidd, 2015).

3. Research Methods

3.1 Secondary and primary data collection methods

To conduct research on open innovation at the Department of Science and Technology in Bac Ninh, the author deployed data collection methods through three main options: Document research, expert interviews, and business surveys.

3.1.1 Document research

Collect information from the following sources:

Science, Technology and Innovation Report 2020 conducted by the World Bank in 2020.

Project on international integration and cooperation of Bac Ninh city until 2030 (Decision 2887/QĐ-UBND dated December 26, 2023 of the Chairman of Bac Ninh City People's Committee).

Domestic and international reports, books, scientific research articles, seminars related to innovation and open innovation in enterprises.

Purpose: The literature review aims to synthesize and analyze existing information from domestic and international reports, books, and scientific articles on open innovation and its application models, and then apply them in the context of small and medium enterprises (SMEs) in Bac Ninh.

Implementation process:

Documents used: in academic databases, electronic libraries, research reports, monographs, and related scientific articles.

Select the most relevant and valuable documents to ensure the accuracy and completeness of information.

Synthesis and analysis: Read, summarize, and analyze documents to build a theoretical basis and research framework for the topic. Focus on important trends and findings on open innovation in the context of SMEs and in Bac Ninh. Contribute to promoting and implementing to help Bac Ninh become an innovation city in the coming time.

3.1.2 Expert Interview

Interviews with experts in the innovation ecosystem, aiming to collect opinions, experiences and perspectives from people with deep expertise in innovation, science and technology management and research and development activities.

Implementation process:

Expert selection: Identify and select reputable experts in the field of innovation and innovation ecosystem management such as presidents of small and medium-sized enterprise associations, president of the Bac Ninh Young Entrepreneurs Association, president of the Bac Ninh Private Entrepreneurs Association, presidents of startup incubators in Bac Ninh

The experts are professors, lecturers, researchers, industry managers, and business consultants on innovation.

Interview Questionnaire Design: The author developed a detailed set of interview questions, covering key issues related to understanding and readiness for open innovation and open innovation models, digital transformation, technology, financial resources, market challenges and opportunities, etc.

In addition, refer to the questionnaire on business readiness for open innovation designed and issued by Strategyer in 2020.

Consists of 3 main pillars and related sub-elements:

▪ **Leadership factor**

Publish and guide strategy (clear innovation strategy identifies where to leverage).

Resource Allocation (Allocating available resources for innovation).

Portfolio management (exploring new opportunities to run core business).

▪ **Organizational design**

Legitimacy and power (status of innovation groups and projects within the organization).

Bridge to the core (access to resources and skills).

Reward and Incentive (Incentive System for Subordinates to Perform).

▪ **Implement innovation**

Innovation Tools use innovation tools across the company. Managing the innovation process from idea to scale.

Skills Development: Training in skills and innovation experience.

Interviews: Conduct in-depth interviews with individual experts. Interviews are conducted in person, over the phone, and via online platforms.

Conduct in-depth interviews with experts in the innovation ecosystem such as:

Director, Deputy Director of the Center for Innovation Support of Bac Ninh City

Director of startup incubator centers

Leaders of innovation centers at universities

Innovation consultants of Bac Ninh city

Angel investors, venture capital funds

Business advisors on innovation

Data collection and analysis:

Record and analyze information obtained from interviews to draw conclusions and recommendations based on expert opinions and experiences.

3.1.3 Business survey

Primary data through direct interviews with 38 innovative enterprises in Bac Ninh and Quang Nam provinces in 2024. The interviews focused on clarifying factors that are believed to have an impact on innovation capacity in enterprises, the importance of these factors, other supports or limitations that impact innovation, especially the impact of policies to propose solutions.

Design survey questionnaires and direct group surveys in innovation workshop programs in Bac Ninh, through the following programs:

- Organize a mini workshop on the need to access preferential interest rate capital that requires innovation and creativity with capital funding partners
- Organize training programs on innovation and open innovation in enterprises for SMEs
- In-depth interviews with business owners and sales and marketing managers.

3.2 Data analysis method

- **Qualitative analysis:** Using coding method to analyze data from interviews.
- **Quantitative analysis:** Use statistical tools to analyze data from surveys.

The study used SPSS 26.0 software to analyze factors and test the reliability of data and used correlation regression model to test the relationship between dependent variable and independent variables.

4. Results of human resource development research of Bac Ninh province's innovation center in recent times

4.1 Policy mechanism for human resource development of the innovation center of Bac Ninh province

Coordinate to participate in completing the legal framework, reviewing and amending legal regulations, meeting the needs of developing the labor market in the right direction, focusing on key areas of Bac Ninh province. - Enhance the publicity and transparency of subjects participating in the labor market, linking the labor market of Bac Ninh with

other localities across the country. Research and propose amendments to policies to limit unemployment, improve labor quality, including: Supplementing and perfecting proactive policies, preventing unemployment; policies to support vocational training through vocational training cards for workers; regulating professional standards and conditions to ensure effective implementation of vocational training activities at enterprises.

Invest in developing the Bac Ninh Employment Service Center in a modern direction to meet the requirements of developing a flexible and effective labor market, playing the role of a focal point for labor market information, coordinating, supporting and managing the labor market in the province.

Arrange and reorganize the network of vocational training institutions; promote digital transformation in training, human resource supply, administration, labor market operation and remove difficulties to create conditions for workers to access information about the labor market, participate in vocational training and job transaction activities, and for employers to easily access labor supply.

Diversify training types, focus on retraining and regular training for the workforce to create changes in building a learning society; promptly remove difficulties and create favorable conditions for vocational training institutions to take the lead in organizing the teaching of continuing education programs at the high school level in the direction of promoting streaming and ensuring the rights of students to both learn vocational skills and study culture right at the vocational training institution.

Focus on vocational training and job creation to develop the rural labor market to serve the economic restructuring process as required by Resolution No. 19-NQ/TW dated June 16, 2022 of the Party Central Committee on agriculture, farmers, and rural areas by 2030, with a vision to 2045.

Conduct review and assessment of human resource needs in each industry, field and locality to promptly connect and supply labor. Especially grasp the human resource needs of foreign investors who have projects or are researching to invest in the province.

Carry out activities to provide labor market information, connect labor supply and demand, support sustainable job creation for workers, prioritizing workers from poor households, near-poor households, and households that have just escaped poverty. Promote the role of connecting labor market information, especially connecting regions of Employment Service Centers.

Increase the scale and frequency of organizing job fairs and job fairs to facilitate employees and employers to access information and seek job opportunities. Develop modern forms of job fairs on digital technology platforms; attract local workers, train and retrain the working workforce to adapt to unusual fluctuations.

Strengthen information and propaganda work, raise awareness of workers, employers and subjects participating in the labor market; ensure stability and development of the labor market.

Review and improve the operational capacity of vocational training institutions in the province, especially in training high-quality human resources.

4.2 Creating jobs and using innovative human resources

Innovating the economic growth model associated with sustainable development towards improving quality, creating many new jobs with high productivity and quality.

Increase investment in resources for programs and projects to create more sustainable jobs, especially high-productivity jobs; research and propose policies to support the recruitment and use of specific labor groups, vulnerable laborers, laborers from poor households, near-poor households, and newly escaped-poverty households to participate in the labor market and have sustainable jobs. Timely remove difficulties and obstacles to increase the effectiveness of vocational training, create jobs for young people who have completed their military service, police service, and young volunteers who have completed their tasks.

Increase credit sources to promote the creation of new, creative, high-quality, sustainable jobs; green jobs; jobs for the disadvantaged; prioritize capital allocation for the Provincial Social Policy Bank to have enough resources to effectively implement credit programs to create jobs and provide vocational training for workers, contributing to the development of a sustainable labor market.

There are policies to encourage production and business establishments and households to register and operate as enterprises to attract and employ formal workers, gradually converting informal workers into formal workers.

4.3 Streamlining and improving the quality of innovative human resources

Continue to promote the streaming of students after junior high school and high school into vocational education and gradually popularize vocational training for young people; strengthen effective vocational training after streaming; create favorable conditions for vocational education institutions to take the lead in organizing the teaching of continuing education programs at high school level.

Continue to review and evaluate the current situation and network of vocational training institutions; in the direction of openness, flexibility, diversification of types, and reasonable allocation of occupational structure and qualifications.

Promote digital transformation, modernize facilities, and modernize vocational training equipment. Synchronously develop digital infrastructure including data infrastructure, common technical infrastructure of the province on vocational education and vocational training institutions. Connect the synchronous database system with the national database system for exploitation and use.

Focus on investing in facilities for vocational training institutions that meet the standards of practice, experiment, and testing facilities; invest in training equipment for vocational training institutions that are suitable for the production technology of enterprises, orienting the quality stratification and characteristics of training industries and occupations, specifically:

Investing in upgrading classrooms, workshops, laboratories, and internships; purchasing training equipment for key national, ASEAN, and international occupations for public colleges and secondary schools in the province to ensure quality training, focusing on investing in modern equipment

to train and develop high-quality human resources to meet the requirements of the 4.0 industrial revolution.

Effectively apply science and technology, career guidance, entrepreneurship and innovation, enhance international cooperation, and innovate training programs. Strengthen vocational education scientific research towards application and technology transfer with the participation of learners, teachers, experts, artisans, and employers. Link training activities with technology transfer, commercialize scientific research results in the field of vocational education. Promote career guidance before, during and after vocational training; promote the spirit of entrepreneurship and innovation for learners and activities to support learners in starting businesses and creating jobs; build a space for entrepreneurship and innovation in vocational education institutions and a vocational education entrepreneurship ecosystem.

Issue training programs and textbooks for new occupations; revise and upgrade training programs and textbooks for occupations currently being trained at college and intermediate levels; develop new and update elementary vocational training programs and regular training programs. Complete foreign language training programs, textbooks and materials according to output standards of key national, ASEAN and international occupations and occupations; apply foreign language output at levels 2-3 for intermediate and college graduates.

4.4 Support the development of insurance for employees, building labor relations at the innovation center of Bac Ninh province

Effectively implement assigned targets and tasks on developing social insurance (SI), unemployment insurance (UI), and voluntary insurance participants; effectively handle policies and regimes on SI, health insurance (HI), UI, and voluntary insurance for participants; improve service quality for people and businesses participating in SI, HI, UI, and voluntary insurance.

Strengthening the direction of information and propaganda work; innovating the content and form of propaganda, disseminating policies and laws so that workers and people clearly understand the necessity, benefits, roles, meanings and basic contents of social insurance, health insurance, and voluntary insurance policies for ensuring social security, creating consensus and unity in implementation; coordinating with media agencies to increase the opening of specialized pages and columns to propagate policies and laws on social insurance, health insurance, unemployment insurance, and voluntary insurance. Focusing on propaganda about rights and obligations for participants, according to the principle of contribution, benefit, rights corresponding to obligations, and sharing in participation and benefit.

Be proactive in coordinating and synchronously implementing groups of solutions to develop participants; urge collection and reduce late payment amounts, prevent late payment of social insurance, unemployment insurance, and voluntary insurance; regularly review and complete the database of non-participants to develop a plan to propagate and mobilize participation in compulsory social insurance and voluntary social insurance.

Improve capacity for subjects in labor relations; organize dialogues, negotiate collective labor agreements, innovate methods of mobilizing the establishment and operation of grassroots trade union organizations; build harmonious,

stable and progressive labor relations in enterprises, contributing to promoting production development, improving workers' lives and stabilizing social order.

Effectively implement the Project on developing labor relations in Bac Ninh province for the period 2021-2025 approved in Decision No. 395/QĐ-UBND dated October 21, 2021 of the Provincial People's Committee.

Strengthen inspection, examination and supervision of the implementation of legal policies on labor, employment, wages, social insurance, occupational safety and hygiene, and vocational education at labor-using units to ensure the legitimate rights and interests of workers.

5. Some Policy Implications on Human Resource Development For BAC Ninh Province Innovation Center

5.1 Policy solutions

5.1.1 Support policies from the government and city authorities

Innovation support fund: Currently, Bac Ninh, according to personal observations and participation in innovation support projects implemented by the Department of Science and Technology and the Department of Industry and Trade, the city also has projects to sponsor creative startup projects, SMEs receiving technology transfer and innovation, standardizing products as well as managing according to international standards.

However, the number of businesses that meet the standards for funding is still modest due to many reasons: It could be that businesses have not demonstrated their ability to implement projects or have low innovation, project viability, or businesses do not really understand innovation.

City funding support funds for loans and venture capital still have legal barriers regarding capital recovery responsibilities, making it difficult for SMEs to access.

Therefore, local authorities need to review regulations and rules so that startups and SMEs can access them more easily.

In addition, the city should cooperate with international funding sources to directly finance or lend at preferential interest rates to new SME projects in design and development, accelerating from innovative methods such as startups.

Tax reduction policy:

Apply tax breaks for businesses that invest in research and development (R&D) or adopt new technology. This helps reduce the financial burden and encourages businesses to invest in innovation.

Tax reduction policy for enterprises applying and developing innovative projects in enterprises in innovation factors from management to product and market development.

Training program:

Organize specialized training programs on innovation, new technologies and innovation management for SMEs leaders and employees. These programs should be conducted by universities, research institutes or specialized innovation organizations with experts who are strictly assessed for academic and market experience in open innovation.

International cooperation:

Implement cooperation with international organizations to bring training programs and transfer advanced technology on innovation from developed countries, successful in implementing innovation for SMEs such as Switzerland, USA, Singapore.

Technical Support Center:

Establish technical support and innovation centers to provide consulting services, technical support and information on new technologies to SMEs.

5.1.2 Proposals to improve existing policies**Evaluate effectiveness and adjust policy:**

Regularly evaluate the effectiveness of current support policies to ensure they are providing practical benefits to SMEs. This includes collecting feedback from businesses and analysing real-world data.

Should be annual evaluation based on policy implementation outputs.

Enhance transparency and information:

Ensure that all innovation support policies are widely publicized and accessible. The city should design more accessible dissemination programs in regular outreach to SMEs, in guidance, and in supporting business registration.

It can be multimedia communication programs, via electronic platforms such as text messages, emails, etc. with friendly, easy-to-register initial links and forms.

Live dialogue programs with each industry group with innovation experts to guide and train on how to innovate

Encourage private sector participation:

Strengthen public-private partnership (PPP) models to mobilize resources from the private sector in promoting innovation. This could include encouraging private investment in innovation support funds or collaboration in R&D projects.

5.2 Technology solutions**Research and apply advanced technology:**

Encourage businesses to cooperate in researching and applying the latest technologies, such as artificial intelligence (AI), Internet of Things (IoT), blockchain, biotechnology, new environmentally friendly materials technology, semiconductor technology, quantum computers, etc. to improve competitiveness, productivity and efficiency in production and business.

Regular technology updates:

Ensure that businesses regularly update and upgrade technology to keep up with market trends and needs.

Refer and learn creative business models.

Encourage businesses to consult and research innovative business models at home and abroad, through the application of science and technology, and cooperate with external units to implement in the business.

Investing in technology infrastructure and supporting software.

Building technology infrastructure:

Invest in technology infrastructure such as servers, networks and hardware to ensure smooth and efficient business operations.

Partner with cloud storage service providers and/or non-cloud internal secure network management networks depending on the capabilities, capacities and business model of the enterprise.

Software development support:

Invest in enterprise resource planning (ERP) software, customer relationship management (CRM) software and other supporting technology and software tools to optimize internal processes and enhance business capabilities.

5.3 Financial solutions**5.3.1 Increasing access to capital for SMEs**

Venture Capital Funds: Encourage venture capital funds to participate in providing financial support to businesses with high potential for innovation.

5.3.2 Financial incentive policy:

Apply financial incentives, such as reduced loan interest rates and tax exemptions, for businesses investing in innovation.

5.3.3 Financial support programs from banks and credit institutions

Concessional Loan Program: Develop concessional loan programs for SMEs so they can invest in innovation.

Financial support from credit institutions: Cooperate with credit institutions to provide flexible financial support packages that suit the needs of businesses.

5.4 Human resource solutions

Training and skill development for employees.

Intensive training program: Organize intensive training courses on technology, innovation management and creative skills for employees.

Cooperation with universities and research institutes: Cooperation with universities and research institutes to provide training and internship programs for employees. Create a work environment that promotes creativity.

Encourage a culture of innovation: Facilitate and encourage employees to participate in innovation activities through competitions, workshops and reward programs.

Building a creative workspace:

Design open and flexible workspaces to promote creativity and interaction among employees.

5.5 Solutions on cooperation and networking**5.5.1 Building a cooperation network between SMEs and research organizations and universities****Research collaboration network:**

Facilitate businesses to cooperate with research institutions and universities to carry out joint research and development projects.

Training partnership program:

Develop joint training programs between businesses and universities to train high-quality human resources.

Program for testing innovative products and solutions designed by SMEs: The current legal framework does not yet allow innovative solutions to be tested in public agencies, as a way to test the market in line with the international innovation model. - The existing bidding law requires experience and history of project implementation, while innovative solutions are new and have never appeared on the market (possibly on a global scale). Therefore, innovative solutions go against current laws, forcing innovative solutions to find ways to export to other countries or establish businesses in other countries that do not have this requirement. Therefore, it is recommended to allow testing of innovative products / solutions applying science and technology, under the control of the government, and to authorize a third party to monitor the production and operation of products in accordance with national and/or international quality standards in each industry. Allowing innovative solutions to participate in bidding and

demonstrate technical technology, bringing outstanding benefits to users, meeting international standards and quality standards (if national standards have not been updated), including software products.

5.5.2 Promote international cooperation and learn from foreign enterprises

Experience exchange program:

Participate in experience exchange programs and learn from foreign businesses to apply best practices to your business.

International cooperation in R&D:

Cooperate with international partners in research and development projects to enhance the company's innovation capacity.

5.6 Investment solutions for Research and Development (R&D)

Increased investment in R&D:

Encourage businesses to invest heavily in research and development to create new products and services.

Cooperation with research institutes and universities:

Facilitate businesses to cooperate with research institutes and universities to carry out R&D projects.

Financial support for R&D:

Provide financial support packages, including grants and concessional loans, for corporate R&D projects.

5.7 Multimedia communication solutions

Strengthening communication programs: Governments and business support organizations need to strengthen communication programs on innovation, especially through mass media channels such as television, newspapers, and the internet.

Create information platforms: Build online information platforms dedicated to innovation, where businesses can easily access and learn the necessary information.

Collaborate with media organizations: Collaborate with media organizations to develop programs, articles, and features on innovation in businesses, with a particular emphasis on success stories from SMEs to motivate and encourage other businesses to learn and apply.

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