

EXPLAINER

# Creating Centers of Excellence to Fill Critical Skills Gaps



Centers of excellence may be used as a policy tool to help supply highly skilled individuals for key sectors of the economy.

Photo credit: ADB.

*Establishing centers of excellence can be a fast and cost-effective way for countries and industries to create much-needed specialists.*

## Introduction

### What you need to know

Asian economies need a steady supply of highly skilled workers to boost productivity and sustain their growth momentum. One way to do this is by establishing centers of excellence, which can help drive rapid, targeted improvements in the quality of training.

A center of excellence is a shared facility or entity that provides leadership, best practices, research, support, and training for a specific sector.

The pace of learning and innovation in a country is critical to economic success. Specialist skills shortages often emerge at short notice. Governments, employers, and training providers need to work

together to fill these critical skills gaps.

## What You Need to Know Centers of Excellence



### Benefits

Centers of Excellence can raise training standards, boost productivity, address emerging skills gaps, and align training and research with industry needs.



### Partnership between Stakeholders

Involving industry as well as government representatives in management and governance structures is important. Industry can provide cofinancing, design training courses, and/or provide equipment, facilities, and trainers.



### Self-sufficient and Autonomous

Centers of excellence should have sufficient autonomy to make strategic training and resource allocation decisions in line with their objectives. Resources can come from a combination of industry contributions, user fees, and government funding.

## 5 Reasons for Building a Center for Excellence

Here are five reasons government and industry may want to establish these specialist training centers.

1. To raise standards and boost productivity in specific sectors in high demand.
2. To deliver niche training where volume needed is too low to justify general reorientation.
3. Stimulate innovation and applied learning by co-locating learning with research and development.
4. Act as a positive role model for other educational institutions in related fields.
5. Prepare a select group of workers with internationally recognized qualifications to facilitate global movement.

## Three Operational Models

### Three Operational Models for Centers of Excellence



## Model 1: Centers within a training institution

The most common is establishing a center of excellence within an institution, such as a university or training provider. Existing facilities may be used, or new ones may be constructed. The institution can be elevated from "good" to "great" by providing expert trainers, researchers, facilities, and equipment. Typically, this center will become a model of best practice in the designated field. This approach enables the new center to take advantage of the reputation and resources of an existing institution with a solid reputation.

### Practical success factors

- Assessment criteria and the process used to select the institution should be fair, transparent, and clearly explained to all participants.
- Efforts should be made to work with industry in its initial design and to gain industry sponsorship and technical and financial contributions toward establishment and operations.
- Governance and management of the center should be suitably distinct from the management structure of the host institution to allow for autonomy in addressing sector needs. Industry should be involved in management and governance structures.
- Care should be taken to ensure that resources allocated for the development of the center are not diverted elsewhere within the host institution.
- It may be appropriate for the center to have an explicit remit to share knowledge and expertise to raise standards across other institutions.

### Examples

- The Asia Pacific School of Logistics was established in 2004 at the Inha University in the Republic of Korea at an initial cost of \$11 million. It educates global logistics experts. It works on joint projects with the Ministry of Land, Infrastructure, and Transport.
- Belarus's International Innovation Environment Park was established in 2010 as a center of excellence for renewable energy. It is operated by the International Skharov Environmental Institute of Belarusian State University. It serves as a demonstration center for renewable energy technologies and offers a range of courses. It also encourages collaboration among researchers, entrepreneurs, and investors and provides technical training for small and medium enterprises.
- The LILAMA 2 International College of Technology in Viet Nam is being developed into a center of excellence for vocational education by the government with international support and in collaboration with industry. The college is focusing on disciplines such as industrial mechanics and metalwork where there is strong growth potential in the economy and where it has some existing experience and facilities.
- In the People's Republic of China (PRC), the Chinese Academy of Sciences (CAS) has set up five centers of excellence, each hosted by a different institution. All aim to provide opportunities for researchers from developing countries to study, train, and work in Beijing-based laboratories. For example, the center for excellence for green technology is based at the CAS Institute of Process Engineering and the center for water and environment is based at the CAS Research Center for

Eco-Environmental Sciences.

- In Canada, the Center of Excellence for Oil & Gas opened in 2007 inside the campus of the Northern Lights College, dubbed as British Columbia's Energy College. The \$12-million Jim Kassen Industry Training Centre offers hands-on learning opportunities to prepare students to enter the oil and gas industry and support the economy.

## Model 2: Stand-alone independent centers

In some situations, a center of excellence is set up from scratch on a brownfield or greenfield site not connected to an existing institution. This requires intensive capital and human resources investment, as all facilities, recruitment, operational structures, and processes need to be established. This may take several years, so a positive reputation needs to be quickly established. Involving industry in cofinancing and sponsoring the center can be highly effective.

These centers may be linked to wider governance or organizational structures. For example, a stand-alone center may be established by an industry skills council that has identified training needs that cannot be addressed by existing providers. There are several advantages to linking a new center to an industry skills council or similar industry body, including the ability to use established governance structures, and immediate links with industry and government policy priorities.

### Practical success factors

- Industry involvement and co-investment are critical to the success of stand-alone centers because of the need to establish immediate credibility and relevance with employers.
- The lead time required to establish a stand-alone center should be considered. Acquiring land, gaining planning permission, constructing facilities, and then recruiting staff can all take time.
- Establishing effective management and quality assurance arrangements is an important consideration for new centers. This provides an opportunity to follow best-practice principles and procedures from the very start.
- Given that the center is not part of an existing education institute, consider how its courses will be accredited. A possible option is adopting international standards through partnership with world-renowned institutions abroad.
- Governance and management of the center should involve structures that enable ongoing inputs and advice from industry and government.

### Examples

- Bangladesh's Centre of Excellence for Leather Skills was established by employers who were organized to form an industry skills council facilitated by the government. It provides a "one-stop solution" for training, research, course and curriculum development, and other skills development requirements. The center also built its own capacity through international accreditation, certification, and public-private partnerships. Employers have helped by providing trainers, machines, and training materials.

- Enderun College in the Philippines was established in 2005 by business and community leaders who want to create an internationally competitive center of excellence in hospitality. Today, the college offers certificates in conjunction with international hotel and culinary schools.
- In Malaysia, the Penang Skills Development Center provides training across sectors to meet the needs of its employer-owners. The center was started in 1989 with land and grant funding provided by the government. It is operated by private employers, who provide trainers and equipment, and develop the curriculum. It is a nonprofit with more than 140 employer-members. To date, more than 200,000 participants have completed 10,000 courses.
- The DRB-HICOM University of Automotive in Malaysia was set up in 2010. It is owned by HICOM University College Sdn. Bhd., a subsidiary of Malaysian automaker DRB-HICOM Bhd.
- In the United States, the Center for Excellence in Education was founded in 1983 as a nonprofit center to encourage academically bright students to take up science, technology, engineering, and mathematics. All programs are offered free to students.
- The Korea Advanced Institute of Science & Technology was launched in 1971 as the Republic of Korea's first science and technology graduate school focused on research.
- In 2012, cement firm Holcim Singapore set up a center of excellence that specializes in innovative building materials. It was the first center of excellence in Asia's construction industry.

### Model 3: Networks of excellence

These are organizational structures or agencies that bring existing training providers together in a network. This can be an appropriate option when good-quality training providers operate in isolation from each other or do not collaborate with industry.

Establishing a network does not involve the physical construction of new training facilities. Capacity-building efforts are focused on existing providers. These may involve upgrading equipment, strengthening human resources, and the granting of a recognized "kitemark" or certification of quality.

Networks of excellence can be an effective means of ensuring that provision in specific areas is aligned with government policy priorities. They are also particularly useful in situations wherein the skills needs of a particular sector or subsector are diverse.

#### Practical success factors

- Since effective relationship building between training providers and industry is essential for the network to succeed, consideration should be given on the most appropriate coordination and communication mechanisms.
- When deciding upon this approach, there needs to be confidence that existing providers are delivering good-quality training that can be enhanced. The selection process for providers wishing to become part of the network should be carefully considered.
- Communications and branding are key in articulating a shared direction and vision for the network and its linked training providers, and in raising public awareness of quality training.
- Governance structures need to ensure that providers' and industry's views are articulated, and that there are linkages with government priorities.

## Examples

- In collaboration with eight telecommunication companies, India established seven centers of excellence in 2008. Each center is located in an institute of technology, science, or management with a dedicated industry partner or partners.
- The Malaysia Automotive Institute promotes collaboration among tertiary institutions in establishing an automotive apprenticeship program and supports the development of value-added products through advanced technical training. The institute is an executive agency acting as the strategic focal point, coordination center, and think tank for the automotive industry.
- The United Kingdom's National Skills Academy for Nuclear is a nonprofit employer-membership organization that provides a noncompetitive forum for businesses to come together to discuss their skills challenges and to develop and implement solutions. The academy works with more than 50 public and private providers across the country and has an online learning portal to deliver skills development and training to both new entrants and existing members of the workforce.
- The Education Council of Aotearoa New Zealand established a virtual center of excellence, supporting in-service training for education professionals. The council aims to set teaching standards, register teachers, provide professional leaders, carry out research, among others, and thus, raise the quality of teaching in the country.

## Characteristics of Effective Centers of Excellence

Centers of excellence generally share several common characteristics that distinguish them from other training institutions.

- Delivery of higher quality or more advanced/specialized training, possibly for a niche market
- Closer relationship with industry resulting from a strong supply/demand inter-dependency
- Independent management and governance with decision-making powers and control over budgets
- Delivery of qualifications and training which may be to international rather than national standards
- Sustainable financing guaranteed, to allow for long-term planning
- Alignment with wider government priorities and sectoral plans for economic development

# What You Need to Do

Here are five key steps to consider when setting up specialist skills training.

## 1. Identify the problems.

Government, employers, and stakeholders must understand, recognize, and agree on the issues. Are growth constraints due to a lack of high-level training, lack of equipment, or issues to do with the public perception of the sector?

## 2. Articulate the specific objective the center is trying to achieve.

It is important to articulate the specific sectoral or geographic ambition for specialized training and to show how this relates to plans for growth and improvements within a specific sector. If the goal of the center of excellence is clear, then this provides a strong platform to solicit stakeholder support and identify the most appropriate type of response.

## 3. Engage with employers.

Involve employers in planning, managing, and financing training. Access to employer facilities is essential to develop the incremental innovation that drives productivity. Engage a wide cross-section of employers if possible, from large multinationals through to small and medium enterprises. Successful centers often put in place management structures and steering committees that gave employers a prominent role in decision making.

## 4. Build on existing strengths.

Before creating new structures and facilities, plan to build on what already exists. Can facilities be located at an existing university or technical institute with a strong reputation among employers and learners? If new facilities and structures are required, consider whether employers can provide the use of facilities or co-invest in equipment. Specialized centers can have a catalytic effect in building relationships among academia, employers, and policy makers.

## 5. Promote innovation and communicate success.

Specialist skills training centers can play an important role in changing public perceptions of an industry sector, in bridging skills gaps, and in contributing to incremental innovation that enhances productivity and economic growth. Innovation and productivity gains are generated through the continued practical workplace application of skills and research. Branding and communications are important in specialist skills centers—presenting a coherent picture of the latest developments and providing a platform for collaboration and dissemination of knowledge among employers and training providers.

# Resources

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Explainer: *How to Enhance Skills Development with Digital Learning*

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