



International
Labour
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Upskilling SMEs



**How governments fund training and consulting.
Comparing experiences from Asia,
Europe and North America**

International Labour Organization October 2017

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ABBREVIATION AND ACRONYMS

AQMS	Aerospace Quality Management System	MTI	Ministry of Trade and Industry
CBT	Computer-Based Training Scheme	NHRC	National Human Resource Centre
CDG	Capability Development Grant	NIST	National Institute of Standards and Technology
CORFO	Chilean Corporación de Fomento	NPB	National Productivity Board
DES	Department of Education and Skills	NTF	National Training Fund
DOC	U.S. Department of Commerce	OIG	Office of the Inspector General
EDB	Economic Development Board	OJT	On-the-Job Training Scheme
ETP	Employer Training Pilots	OTEP	OKU Talent Enhancement Program
FFO	Federal funding opportunities	POS	Point-of-sales
Finuas	Finuas Networks Programme	PSB	Singapore Productivity and Standards Board
FONTAR	Argentinean Technological Fund	PSMB	Pembangunan Sumber Manusia Berhad
FWT	Future Workers Training Scheme	QMS	Quality Management System
GAO	Government Accounting Office	RPL	Recognition of Prior Learning Scheme
GST	Goods and Services Tax	SBL	Training Assistance Scheme
HRDF	Human Resource Development Fund	SBL-KHAS	Special Training Assistance Scheme
IBEC	Irish Business & Employers Confederation	SDF	Skills Development Fund
ICT	Information and Communication Technology	SDL	Skills Development Levy
ICV	Innovation & Capability Voucher	SETA	Sector Education and Training Authorities
IDA	International Development Agency	SISIR	Singapore Institute of Standards and Industrial Research
IFS	International finances sector	SME TNA	SME Training Needs Analysis
IMI	Irish Management Institute	SMEs	Small and medium-scale enterprises
INDEC	National Institute of Census and Statistics	SMETAP	SME Training Partners Scheme
IT	Information Technology and Computer-Aided Training Scheme	SSGA	SkillsFuture Singapore Agency
ITS	Industrial Training Scheme	TDF	Technology Development Fund
JSSP	Job-seekers Support Programme	TNP	Training Networks Programme
KCCI	Korea Chamber of Commerce and Industry	VCS	Voucher Counseling System
KPI	Key performance indicators	VET	Vocational education and training
MEP	Manufacturing Extension Partnership		
MMAC	Malaysian Anti-Corruption Commission		
MMTC	Michigan Manufacturing Technology Centers		

EXCHANGE RATES (SEPTEMBER 2017)

1 Malaysian Ringit (RM) = USD \$0.2359 = Euro € 0.2008

1 Singapore Dollar (SGD) = USD \$0.7342 = Euro € 0.6249

1 Euro € = USD \$1.1749

PREFACE

1. Small and medium-sized enterprises (SMEs) are a major source of job creation and account for an increasing share of employment in almost every country.¹ Recognizing their importance in the economy, governments around the world have established SME support programs to boost firm performance. More than 100 countries run national training levy schemes, with thousands of support programs offered by sub-national entities. Recent research estimates that more than \$2 billion US dollars have been spent on matching grant programs for SME development alone over the last twenty years.²
2. This study aims to guide policy-makers and programme managers of SME training funding schemes through the difficult process of designing and implementing such a scheme. It reviews the set-up, funding and functioning of four established SME training schemes in Singapore, Malaysia, Ireland and the United States and highlights the differences in their design, and the pros and cons of different design choices. In particular partners of the ILO's Sustaining Competitive and Responsible Enterprises (SCORE) Programme that offers a training and consulting intervention to the growing number of SMEs should be interested in this study.
3. The ILO is grateful to representatives of the four schemes reviewed in this study - Skillnets Ireland, the Human Resource Development Fund in Malaysia, the Singapore Innovation and Capability Voucher scheme and the US Manufacturing Extension Program. In particular, Paul Healey, Chief Executive of Skillnets Ireland, and Kenneth P. Voytek, Chief of the Manufacturing Research and Program Evaluation Group, Hollings Manufacturing Extension Partnership, National Institute of Standards and Technology (NIST) took ample time to respond to questions and provide additional information to explain the inner functioning of these schemes.
4. The study was conceptualized by Eric Oldsman and Stephan Ulrich and written by Eric Oldsman. Katherine McGregor supported the research and Paul Comyn from the ILO's Skills Branch provided valuable comments in the design and to the final report. The study was funded by the ILO's SCORE Programme - thanks therefore goes to the Programme Manager Michael Elkin and to the two donors of the SCORE Programme, SECO and NORAD, for their continued generous financial support.

EXECUTIVE SUMMARY

5. Recognizing their importance in the overall economy, countries around the world have established programs to boost the performance of small and medium-scale enterprises (SME); many of these revolve around the provision of training and/or consulting services. Government intervention is justified by market failures: enterprises may not invest sufficient resources in training/consulting services because they fear poaching of trained employees, incomplete or asymmetric information on the quality of training and the return on training investment, high transaction costs in purchasing training services and the non-availability of services. While the factors apply to all firms, various studies have shown that small firms are less likely to invest in training/consulting services than larger enterprises.
6. Governments have numerous policy instruments at their disposal to address these market imperfections, including the adoption of certain laws, development of national skills qualification systems, provision of tax incentives, and grants to subsidize training and consulting services. The aim of this study is to develop a better understanding of the ways in which grants to subsidize training and consulting services to SMEs have been financed and executed, including their relative advantages and disadvantages. Four schemes have been reviewed as part of this study, each different in their set-up and funding, as shown by the table below.

		Type of Government Support	
		Grants to Intermediary Institutions that serve SMEs	Grants Directly to SMEs
Source of Government Funds	General Revenue	Manufacturing Extension Partnership (USA)	SPRING Singapore - ICV Scheme
	National Training Levy	Skillnets (Ireland)	HRDF (Malaysia)

1 ILO (2017)

2 Campos et al (2016)

MANUFACTURING EXTENSION PARTNERSHIP (UNITED STATES)

7. The Manufacturing Extension Partnership (MEP) is a national programme of the U.S. Department of Commerce that enhances the productivity and technological performance of manufacturers with less than 500 employees. Established in 1998, the programme consists of a network of 51 MEP centers that are run by affiliated organizations (not-for-profits, universities, state agencies, etc.) selected through open competition. MEP centers are free to provide a broad range of consulting and training services as long as topics support the overall MEP mission. Funding is allocated through federal budget processes and contingent on cost-sharing arrangements, with MEP centers responsible for raising at least 50% of their budgets. Of \$260 million USD spent by all MEP centers in 2016, 40% came from federal funds, 30% from other grant sources (often state and local governments), and 30% was generated through fees charged to SMEs at prevailing market rates. MEP reports interactions with nearly 25,500 SMEs in 2016, giving it a penetration rate of 2% among all SMEs in the United States, rising to 10% outreach among medium firms (250 to 500 employees).

HUMAN RESOURCE DEVELOPMENT FUND (MALAYSIA)

8. The Human Resource Development Fund (HRDF) is a private corporation that oversees a levy-based fund established in 1992 to promote the training and development of workers in Malaysia. Companies that have registered and paid the levy draw on their own levy account balance as well as additional HRDF grants for specific types of training and consulting services. Companies are responsible for identifying their own training needs and organizing appropriate training programmes for workers. There are virtually no restrictions on the type of training, which can be delivered by in-house staff or external training providers registered with HRDF. Companies pay upfront market rates for training services and then apply for 100% reimbursement through an online system. HRDF reports 12,000 SMEs participated in its schemes in 2016, compared to an estimated 135,000 SMEs across Malaysia.

SKILLNETS (IRELAND)

9. Skillnets is a private, non-profit company established in 1999 to develop and implement publicly supported training initiatives in Ireland. The organization receives annual allocations from the National Training Levy Fund of the Department of Education and Skills, and in turn acts as a facilitator and funding agency for 120 training networks the target companies in the same sector or region with similar training needs. Each training network is run by a contracting organization

(usually industry federations or business associations) that is responsible for assessing training needs and providing relevant training courses on a range of topics. Each contracting organization is expected to raise at least 50% of its operational costs through course fees and sponsorship. Training courses are made available to enterprises of any size, including sole traders, and are delivered by external training providers selected through a competitive tendering process. Companies purchase training courses directly from the network at prices typically set at market rates, though some networks offer a 20-25% discount for their members. Skillnets reports nearly 14,300 companies participated in its training programmes in 2016, suggesting a penetration of 6% for all companies in Ireland. Half of participating companies employ 10 employees or less.

INNOVATION & CAPABILITY VOUCHER (SINGAPORE)

10. SPRING Singapore was established in 2002 as a statutory organization of the Ministry of Trade and Industry that supports the growth of enterprises and SMEs. Drawing on government revenues, it runs the Innovation Capability Voucher (ICV) scheme to cover the costs of pre-approved consulting services in four areas: financial management, human resources, innovation and productivity. Companies apply for vouchers in advance using an online process and, if approved, the vouchers cover the full cost of consulting services. Eligible consulting providers and their fees are pre-determined by SPRING Singapore and set equivalent to the voucher value, which is currently S\$5,000 (\$ 3,600 USD). Each SME is entitled to a maximum of 8 vouchers. Outreach for ICV is done through 12 SME Centers established by SPRING Singapore, half run by its own staff and the other half by trade associations and chambers of commerce. SPRING Singapore reports 19,500 SMEs used the ICV scheme in 2015, suggesting a penetration rate of approximately 10% of all SMEs in the country.

WHAT LESSONS CAN BE DRAWN FROM THE REVIEW?

Based on the review of the four schemes, the study highlights pros and cons of different ways of structuring the schemes. Programme managers establishing schemes to support SME training and consulting will have to make decisions concerning the design which will affect its operations. Question that need to be answered include:

1. **What to consider in the governance structure of SME funding schemes?** Strong representation of the private sector in the governing boards or advisory bodies is recommended. In this way, feedback from the target group is more likely to reach the highest levels of management and helps to ensure that programmes respond to the needs of the target group. Representation of employees is also advised

for schemes that support training of workers.

- 2. How are SME support schemes being funded?** Most SME training funding schemes are funded either by general tax revenues or by training levies. The advantage of funding schemes from general revenues is that funds can be allocated more flexibly. Training levies require the set-up of dedicated funding procedures to collect contributions from employers. Their advantage is that once they are in place, they are more likely to insulate training funds from competing demands that arise in the normal budgetary process. However, the instrument is less appropriate for countries with weak economies, large informal sectors, and poor administrative capabilities. Where training schemes are not effective, they become unpopular with employers and some have been abandoned as a result.
- 3. How many enterprises do SME support schemes reach?** The SME training funding schemes reviewed in this study reach between 2 to 10 percent of SMEs in a country per year. Market penetration for medium-sized enterprise is comparably higher since there are less medium-sized enterprises and they are more likely to engage in training. Outreach will be determined by availability of funding and marketing efforts. Working through intermediary institutions like employer organizations can facilitate business outreach.
- 4. How do schemes price their services?** Two schemes reviewed in this study priced their services at market rates, one scheme offered a small subsidy while one scheme fully subsidized its services. The right strategy will depend on the objective of the scheme. It can be helpful to undertake research to determine how enterprises are likely to react to different prices. The cost of training per business of schemes covered in this study range between 800 USD (for programs funding training) to 24,000 USD (including consulting) per enterprise in a year.
- 5. Direct program implementation or execution via intermediaries?** Two schemes reviewed in this study interact with enterprises directly while two schemes work through intermediary institutions. Schemes interacting directly with enterprises need dedicated staff to reach out and interact with enterprises which can be challenging for bureaucracies. Schemes that fund intermediary institutions outsource this function to third parties that might be more accustomed to interact with businesses, though intermediaries come with their own administrative costs and need to be managed by the scheme.
- 6. How can quality of service providers be ensured?** All four schemes reviewed in this study offer services to enterprises via specialized training and consulting service providers. Two schemes select providers through competitive bidding processes which helps ensure that service providers are qualified and cost-

effective. One scheme leaves it up to firms to select the training provider, while SPRING Singapore has established a certification system. The latter might be more effective assuming that standards are well designed, certification procedures are reliable and transparent, and the system is understood and accepted by enterprises. Building such a system comes with considerable cost for development and maintenance.

- 7. How prescriptive should a scheme be in terms of services it will support?** At one end of the spectrum, HRDF allows enterprises to use levies for virtually any type of training available in the market. It relies on the ability of companies to choose services that are likely to yield the greatest impact for them. At the other end of the spectrum, SPRING Singapore only provides financial support for a relatively narrow set of pre-scoped services that are defined by SPRING Singapore with input from service providers and potential customers. The right approach will depend on the desired policy objectives. If the objective is to stimulate training in general, a less prescriptive approach might be appropriate. If the objective is to induce investment into a specific type of training or consulting (for example to promote exports), a more proactive approach may have greater impact, presuming that institutions have accurate knowledge of the relationship between services and desired policy objectives. Any restriction on eligible services limits participation to enterprises that are interested in those particular services.
- 8. What need schemes to consider in relation to transaction costs?** The price of a service is only one component of its cost; enterprises also incur the cost of searching for qualified services providers, executing and managing contracts, and dealing with associated administrative tasks. Lowering these costs can also lead to higher demand. The case studies demonstrate various mechanisms that can be used to reduce transaction costs borne by enterprises, including i) the development of standard services offered at fixed prices; ii) extensive outreach, often done in concert with business associations, to inform enterprises about the availability of services; iii) simplified administrative procedures with online applications and claims submission; and iv) assignment of responsibility for contracting third-party service providers to intermediate institutions. With respect to the first mechanism, the development of standardized services offered at a fixed price removes the need for negotiations between services providers and enterprises; however, it eliminates the potential for tailoring services to the needs of particular firms.

PURPOSE AND SCOPE OF STUDY

1. Recognizing their importance in the overall economy, countries around the world have established programs to boost the performance of small and medium-scale enterprises (SME); many of these revolve around the provision of training and/or consulting services. The aim of this study is to develop a better understanding of the ways in which the provision of these services to SMEs has been financed and executed, including their relative advantages and disadvantages.
2. It focuses on two types of schemes: i) those that provide grants directly to SMEs to enable them to purchase training and/or consulting services; and ii) those that provide financial support to intermediary institutions, which offer training and/or consulting services to SMEs. Because of the critical issue of continuity of service, the study focuses on current schemes that are financed through general revenue and/or dedicated levies (as opposed to time-bound donor funding).
3. The study is based on a review of the literature and case studies of four funding schemes. The literature review includes peer-reviewed articles as well as unpublished studies, technical reports, working papers, and conference proceedings identified through web searches. It was used to assess the current state of knowledge, identify significant policy issues, and develop preliminary propositions concerning good practice. Building on the literature review, four schemes were selected for case studies:
 - the Human Resource Development Fund (Malaysia);
 - the Manufacturing Extension Partnership (United States);
 - Skillnets (Ireland); and
 - the Innovation & Capability Voucher (ICV) scheme established by SPRING Singapore.
4. Each case study describes its origins, governance structure, major features, key policies and procedures, budget, and extent of SME participation. The case studies draw on a review of applicable legal statutes and regulations, policy guidelines, operating manuals, marketing materials, and reports issued by relevant government agencies as well as key-informant interviews and written responses to questions posed by the research team.³ Interviews were conducted by telephone.
5. The main body of this report discusses the rationale for public intervention, provides an overview of policy instruments, summarizes the major case study findings, and presents a number of lessons that might be considered by those interested in establishing similar schemes. The full case study reports can be found in Annex A.

RATIONALE FOR PUBLIC INTERVENTION

6. Businesses throughout the world are faced with decisions on whether to invest resources in training their employees or retaining consultants. A rational, risk-neutral employer will invest in training or consulting services as long as the expected return of the investment exceeds its cost.⁴ However, in practice, investment decisions may not be optimum from the perspective of individual firms or society as a whole.
7. From the perspective of market imperfections, enterprises may not invest sufficient resources in training/consulting services for four main reasons:
 - **Poaching and other externalities.** The skills obtained through training/consulting are embodied in employees, who could leave to take another job. Some firms may elect not to train their own staff if they can readily recruit workers trained by other companies. Poaching lowers the return to companies that invest in training and discourages them from undertaking this activity, particularly with respect to skills that are not firm-specific and easily transferable. This issue does not apply to knowledge and skills of business owners.
 - **Incomplete or asymmetric information.** Efficient markets depend on the free flow of accurate and credible information. Put another way, the idea that price signals will result in an efficient allocation of resources rests on the critical assumption that business owners/managers are well informed about the characteristics and value of services. However, there are reasons to believe that this assumption is not always valid. Enterprises may lack information required to make appropriate purchasing decisions with respect to needed services. Companies may lack knowledge about their own conditions as well as the merits of alternative actions. In addition, while companies are interested in maximizing profit, they may be reticent to seek outside training/consulting services because they cannot adequately judge the

³ The case study on SPRING Singapore is based solely on information in the public domain. Representatives of the organization were unwilling to participate in interviews or respond to written questions.

⁴ The expected return consists of the anticipated increase in profit resulting from training/consulting. Costs primarily include: i) the direct cost of training/consulting; ii) the opportunity cost associated with training/consulting, notably any production loss incurred during the service provision period; and iii) transaction costs entailed in identifying providers, negotiating contracts, and managing the engagements.

quality of services and the return on the training investment before their receipt.⁵ Moreover, because service providers are generally more knowledgeable than customers, the situation may give rise to opportunistic behavior. Economists point out that asymmetric information can result in adverse selection and/or moral hazard, leading to an inefficient allocation of resources.

- **High transaction costs.** In general, there are significant transaction costs associated with finding and securing needed assistance. These internal costs are above and beyond the price charged by service providers and contribute to lower demand.
- **Non-availability of services.** The services needed by enterprises are not always readily available in the local market. Firms that have very particular requirements, operate in small sectors, or operate in

remote geographical locations may find it difficult to find qualified service providers.

8. While the factors apply to all firms, various studies have shown that small firms are less likely to invest in training/consulting services than larger enterprises. For example, the results of a survey of firms in 99 countries showed a strong, positive correlation between investment in firm-level training and employment across countries with different institutions and income levels.⁶ Comparatively low investment by small firms can be attributed to several firm-specific factors, including the *relatively* poor management practices, high risk aversion, high cost of training per worker given fixed costs, high rate of employee attrition as workers leave for higher wages paid by larger employers, and low investment in complementary inputs, including R&D and capital equipment.

POLICY INSTRUMENTS

The study focuses on different types of government funding schemes.

9. Governments have numerous policy instruments at their disposal to address market imperfections, including the adoption of certain laws,⁷ development of national skills qualification systems,⁸ provision of tax incentives, and grants to subsidize services. With respect to the latter, grants can take the form of direct, transaction-based grants to employees and employers, or grants to intermediary institutions that provide services to SMEs. While there is substantial variation in the design of schemes undertaken in different countries, they generally share the same primary objective of increasing the incidence of training or the use of consulting service in firms, and thereby, supporting innovation, boosting productivity and stimulating enterprise growth.
- **Grants directly to employers.** Many governments provide grants to employers to stimulate additional workers training. Fewer currently provide grants for consulting services; in this regard, some past schemes were abandoned in the face of shifting budget priorities.⁹ Grants involve the transfer of financial

resources from the government to a private entity to cover all or part of the cost of services. They are intended to reduce the cost of services and address potential liquidity constraints, leading to greater demand. Grants can be in the form of cash or a voucher with a money-equivalent value. Cash transfers are typically provided on a reimbursable basis subject to specific match requirements. Vouchers are issued as a physical coupon or smart card credit that an enterprise can use to pay for services; the service provider, in turn, can exchange the voucher for cash from an authorized agency.

- **Grants to intermediary institutions that deliver services to employers.** In addition to providing grants directly to small businesses, governments in many countries have provided financial support to intermediary institutions that offer a broad range of training and/or consulting services to existing small businesses. Some of these institutions are state operated; others are not-for-profit organizations that are contracted by government to perform specified functions. Some, but not all, intermediaries charge fees for services under some form of cost-sharing arrangement.

5 Economists refer to this class of products as “experience goods.” See Nelson, J., “information and Consumer Behavior,” *Journal of Political Economy*, 1970.

6 Almeida and Aterido (2010)

7 For example, these include laws dealing with occupational licensing, apprenticeships, payback clauses in employment contracts, and OSH training requirements.

8 National skill qualification systems provide a framework for the recognition of qualifications and credentials. Outcomes-based qualification frameworks are often based on competencies, which are formal expressions of the knowledge, skills and aptitudes required for particular occupations. Competency standards can also serve as the basis for the development of training curriculum and the operation of assessment and certification systems. The accreditation of education and training institutions is often linked to the delivery of qualifications (either full or part) formally registered in the qualification system.

9 For example, two well-regarded programs in Latin America -- Program of Support for Corporate Restructuring (*PRE*) in Argentina and the Technical Assistance Fund (*FAT*) in Chile -- are no longer operational. At this point, most matching grant schemes targeted to SMEs in OECD countries tend to focus on funding for research and development (innovation vouchers), involving cooperation between private enterprises and public research institutions. These are outside the scope of this study

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10. Schemes to help enterprises access business consulting services typically have been financed through general revenue.¹⁰ Though training programs can also be financed this way, numerous countries have imposed special levies on businesses, generally in the form of a payroll tax, specifically to fund vocational education and training (VET). Monies collected through levies are usually credited to a dedicated training fund established by law and managed by statutory, quasi-autonomous bodies, which function under various degrees of oversight of a government ministry. The entities responsible for administering levy funds are also frequently tasked with other related initiatives such as the development of vocational qualification frameworks, establishment of certification systems for training providers, and efforts to build the capacity of training networks. Depending on the country, funds are used to support the operations of training institutions¹¹ and/or to provide grants to help cover the training costs incurred directly by enterprises.¹² According to a report issued in 2009, roughly 60 countries had established a levy-financed training fund – 33 of these included grants or other forms of financial incentives for enterprises.¹³
 11. Most prior studies of funding schemes have tended to focus on process issues, pointing to challenges with respect to SME participation, program management, and administrative procedures, albeit without providing much detail on specific funding mechanisms.¹⁴ While numerous observers have bemoaned the lack of rigorous impact evaluations,¹⁵ there have been some studies that have employed randomized experiments or quasi-experimental techniques to isolate the impact of programs from other intervening factors. Examples of these studies are summarized in Table 1. Some of the evaluations center on assessments of existing government-sponsored schemes; others are based on experiments to test the effectiveness of particular kinds of interventions. The evaluations demonstrate mixed results with respect to the achievement of key policy objectives.

10 Donors have also provided funds for matching grant schemes. For example, World Bank (2016) identifies 106 World Bank projects that included matching grant components; over half were in Africa. These included matching grants for “labor and management training; extension, consultancy, and counseling; marketing and information services; or technology development and diffusion.” While data are unavailable, it appears that most, if not all, of these matching grants programs ceased operations when project funding ended.

11 Dar, et al (2003) and Johanson (2009) refer to these as “revenue generating levies.” The national training funds in Brazil and other countries in Latin America typically fall within this category.

12 Dar et al (2003) and Johanson (2009) categorize training funds on two main dimensions: i) purpose – pre-employment training, enterprise training and equity training; ii) type – revenue generating levies and incentive schemes. The latter are further divided into three means of operations: (a) cost reimbursement, (b) levy-grant and (c) levy rebate/exemption.

13 See Annex B. Not all training funds were operational at the time of the study.

14 See, for example, Dar et al (2003), Adams (2008), CEDEFOP (2008), Johanson (2009), OECD (2010), Gospel (2012), Kingombe (2012), Muller (2012), Hofstetter (2014), Ziderman (2016), and World Bank (2016)

15 For example, as noted in Dar et al (2003), “Evaluative evidence on levy schemes is limited. In spite of the relative prevalence of these schemes, rigorous evaluations of the effectiveness of levy programs are extremely uncommon...” Similarly, Campos et al (2016) includes the following comments, “Matching grant programs are one of the most common policy tools used by developing country governments to actively facilitate micro, small, and medium enterprise competitiveness, and have been included in more than 60 World Bank projects totaling over US\$1.2 billion, funding over 100,000 micro, small and medium enterprises. Add in funding provided by other development agencies and national governments, and it seems likely that at least two billion dollars has been spent on these projects over the last twenty years. Yet despite all the resources spent on these projects, there is currently very little credible evidence as to whether or not these grants spur firms to undertake innovative activities that they otherwise would not have done, or merely subsidize firms for actions they would take anyway.”

Table 1. Evaluations Using Quasi- or Randomized Experiments

Type	Scheme	Method/Findings
Consulting Services	SME Support Programs (Brazil)	IDB (2014). The evaluation assesses the impact of major SME support program implemented in Brazil between 2003 and 2012. It compares the performance of participants and non-participants using panel data obtained from national statistical offices. The study concludes that business consulting services has a positive impact on employment and that the impact increases when combined with credit support. SMEs that received business consulting in addition to credit increased employees by 16% on average (3.6 jobs per establishment).
Training Grants	German Federal Employment Agency (FEA)	Dauth (2015). The paper presents an evaluation of a subsidy scheme for employed workers run by the German Federal Employment Agency (FEA), which covers 100% of direct training costs and a share of employee wages. The evidence suggests that the subsidy improved labor market outcomes of participating employees, specifically 22 days more employment and a 3.5 percent in earnings, but had no effect on the receipt of unemployment insurance (UI) benefits after three years.
Training Grants	Quebec Training Levy (Canada)	Dostie (2012). The paper presents an evaluation of a reform in a train-or-pay scheme used in Canada that exempted medium-sized workplaces from the training requirement. It involves comparing changes in training levels in medium-sized workplaces, before and after the reform, to changes in smaller and larger workplaces. It also compares relative changes in training intensities in Quebec to those observed in a neighboring province in which no such changes took place. The paper finds that the change in policy had no impact on training levels but caused firms to change their human capital investments portfolio, substituting informal and formal training.
Training Grants	Mauritius Training Fund (Mauritius)	Kuku, et al (2012) Using an administrative dataset on the Mauritius training fund, the study shows that larger, high-wage and more capital intensive firms are the most likely to offer training without subsidies, but that the subsidy creates an increased incentives for small firms to train. The study concludes, "It is doubtful that the program actually raises the incidence of training overall."
Training grants	Employer Training Pilots (UK)	Abramovsky (2011). The paper presents an evaluation of the Employer Training Pilots (ETP), which ran in the United Kingdom between 2002 and 2006. Under the program, financial incentives were given to employers to provide qualification-based training to their low-qualified employees. The evaluation specifically looks at whether or not the ETP subsidies increased overall levels of training in the areas where it had been implemented using a difference-in-differences approach. The evidence presented suggests that the ETP had no statistically significant effect on the take-up of training among eligible employers and employees in the first 3 years of the program.
Training Grants	Sectoral Training Funds (Netherlands)	Kamphuis (2010). Using a comprehensive dataset on Dutch firms, the paper compares training in sectors with and without a training fund. It finds no evidence "for the existence of a stimulating effect of the presence of a fund on the level of training investments of firms."
Training Grants	NWR Voucher Program (Germany)	Gorlitz (2009). This paper evaluates the impact of a training voucher program in the German federal state of North Rhine-Westphalia, which focuses on employees working in establishments with fewer than 250 employees. The estimation is based on a quasi-experimental research design exploiting variation across time, regions and establishment size. Using establishment data, the paper finds that for establishments having fewer than 50 employees, there is no statistically significant effect of the vouchers with respect to the incidence of training, while there is a large impact for medium-sized establishments of 7.5 percentage points. However, it finds no effect on the percentage of employees receiving in relation to all employees in establishments that invest in training (training intensity).
Training Grants	Industrial Development Agency (Ireland)	Gorg (2005). This paper examines whether financial assistance provided by the government induces firms to spend more of their own funds on training expenditures. Using plant level data, the study deals with selectivity and endogeneity, by first identifying a valid counterfactual for grant receiving plants via a matching estimator and then employing a difference-in-differences technique on this matched sample. The study finds evidence that grants stimulates private expenditure among domestic plants, but had no statistically significant effects for foreign-owned plants.
Training Grants	Human Resource Development Fund - Malaysia (a)	Tan and Gill (1998). The paper examines whether reimbursements from the training levy led to increased training activity. The study is based on a survey conducted in 1994 of 1450 firms eligible to participate in the HRDF. It found that 402 firms (27.7 percent) were not registered with the HRDF. Of those registered, another 34.5 percent reported that they did not claim reimbursements under HRDF. The study compared the training activity of two groups of firms: those registered with the HRDF, and those who were eligible but chose not to register. Regression analysis showed that while HRDF did not have any impact on increasing training by small firms, it did have a role in increasing training by medium and large firms.
Consulting Services	Experiment	Bruhn (2013). The paper presents the results of an evaluation of an experiment comparing the performance of a randomly selected group of companies that received four hours of consulting services per week over the cost of one year to a control group that did not receive services. Companies in the treatment group paid 10-30 percent of the total cost of services (roughly US\$12,000) depending on firm size. Using survey data, the results show that consulting services had positive effects on return-on-assets and total factor productivity. Owners also had large increases in "entrepreneurial spirit" (an entrepreneurs' managerial confidence index). Using Mexican social security data, the study finds a large increase in the number of employees and total wage bill several years after the program.

Type	Scheme	Method / Findings
Grants for Consulting Services	FAMEX II (Tunisia)	Gourdon et al (2011) as reported in Piza et al (2016). This paper examines the impact of the FAMEX II program, which intends to provide Tunisian firms with export-development assistance on a cost-sharing basis. Based on an analysis of firm-level survey data, results suggest that FAMEX II had positive impacts on export growth. The estimated average annual growth rate of export values during the program period 2004-08 is higher for FAMEX II participants than for the control group. The estimates suggest that FAMEX II improved the margins on exports. But, the estimated impact of FAMEX II on total firm sales and employment are weak, suggesting some reallocation between exported and non-exported products within supported firms.
Grants for Consulting Services	SME Support Program – PRE (Argentina)	Castillo (2010). This paper evaluates the impact of the SME support program known as “PRE” on employment, real wages, and exports. The program aimed at increasing the competitiveness of SMEs by co-financing up to fifty percent of expenditures in professional services and technical assistance. The study uses a panel dataset constructed with administrative records. The analysis combines propensity score matching and difference in differences methods to control for selection biases. The study finds a positive and important impact of the program on employment and a positive although smaller impact on real wages and the probability of exporting. The effect of the program on wages and exporting is shown to take place one year after beneficiaries receive assistance; the effect on employment takes place over one to three years.
Grants for Consulting Services	Chilean Technology Development Fund – FONTEC (CHILE)	Benavente Et al. (2007) as reported in Piza et al (2016). The authors adopted difference-in-differences and propensity-score matching methods to estimate the program’s impacts, using data from a survey of beneficiary and control firms carried out by the Chilean Corporación de Fomento (CORFO). Results suggest that FONTEC’s subsidies partially crowded out private investments in innovation and more effectively promoted technological upgrades and process innovations, rather than radical product innovations. Also, “despite finding a positive impact on employment, sales and export, the results did not clearly support a significant result in terms of productivity.”
Grants for Consulting Services	Technological Fund –FONTAR (Argentina)	Chudnovsky et al (2006) as reported in Piza et al (2016). This paper evaluates the impact of the Non-Reimbursable Funds (ANR) program of the Technological Fund of Argentina (FONTAR). The database was constructed from a tailor-made survey conducted by INDEC (National Institute of Census and Statistics). Difference-in-differences matching estimators show that the subsidies had a positive impact on the total level of innovation expenditures of treated firms but not on private innovation intensity. Nevertheless, for firms that already had innovation expenditures there is a crowding-out effect of ANR funds, while for other firms, no crowding out is appreciated. Finally, both the estimation of the effect of subsidies on innovative outcomes and firm performance did not result in statistically significant results.
Consulting Services	Experiment (Ghana)	Karlan (2014). The paper centers on an evaluation of an experiment conducted in Accra from 2008–2011. In the experiment, 160 tailors were randomly assigned to three groups – 36 tailors received grants of 200 cedis (about US \$133), doubling their average working capital; 41 tailors received one year of management consulting services from Ernst & Young – an international consulting firm; 36 tailors, received both the cash grant and management consulting; the control group of 45 tailors did not receive either. The authors found that all three treatments lead to their immediate intended effects: changed business practices and higher investment. However, both treatments lead to lower profits on average in the short term. Then, in the long run, the micro-entrepreneurs in the treatment group disinvest relative to those in the control group, and revert back to their prior scale of operations and business practices.
Grants for Consulting Services	Enterprise Revitalization and Employment Pilot (Yemen)	McKenzie (2014). The paper presents the results of an evaluation of a matching grant program in Yemen in which participating enterprises could receive a grant of up to US\$10,000 as a 50 percent subsidy toward the cost of business support services like training, marketing, financing and accounting systems, website creation, and office and IT equipment. The study is based on a randomized experiment, in which eligible enterprises were randomly assigned to a treatment or control group. Based on a self-reported data from a survey, results show that enterprises that received grants were 37 percentage points more likely to have adopted some form in innovation and 16 percentage points more likely to report that sales had grown.
Consulting Services	Manufacturing Extension Partnership (USA) (a)	Ordowich (2012). The paper examines the impact of manufacturing extension services on establishment productivity. It builds on an earlier study conducted in 1999 by matching the Census of Manufacturers (CMF) with the Manufacturing Extension Partnership (MEP) customer and activity datasets to generate treatment and comparison groups for analysis. The scope of the study is the period 1997 to 2002 for centers across the country. Both lagged dependent variable (LDV) and difference in difference (DiD) models are employed to estimate the relationship between manufacturing extension and labor productivity. “The results presented are inconclusive and paint a mixed picture...”
Consulting Services	Manufacturing Extension Partnership (USA) (b)	Jarmin (1999). The paper compares the growth in labor productivity between 1987 and 1992 of participating and non-participating establishments in Pennsylvania and Ohio. Both simple OLS and two-stage models are used to estimate the effect of the program using data from the Longitudinal Research Database (LRD). Results suggest that participation in manufacturing extension is associated with between 3.4 and 16 percent higher labor productivity growth between 1987 and 1992.

Notes: (a) Case studies of these funding schemes are summarized in the next section and presented in full in Annex A.

CASE STUDY FINDINGS

The selected schemes reflect different funding models

12. The four schemes selected for case studies represent examples of different types of government support and source of government funds as shown in Table 2.

Table 2. Case Study Typology

		Type of Government Support	
		Grants to Intermediary Institutions that serve SMEs	Grants Directly to SMEs
Source of Government Funds	General Revenue	Manufacturing Extension Partnership (USA)	SPRING Singapore – ICV Scheme
	National Training Levy	Skillnets (Ireland)	HRDF (Malaysia)

13. A brief description of each of the schemes follows:

- Manufacturing Extension Partnership (USA).** The MEP was established by the Omnibus Trade and Competitiveness Act of 1988 and is administered by the National Institute of Standards and Technology (NIST) within the U.S. Department of Commerce (DOC).² The program’s objective is to enhance the productivity and technological performance of manufacturers in the United States with fewer than 500 employees. The MEP program operates through a network of affiliated organizations – not-for-profits, universities and state agencies – selected through open competition. Located throughout the United States and in Puerto Rico, MEP Centers provide a broad range of consulting and training services to clients, drawing on both internal staff and contracted service providers. Federal funding provided to centers is contingent upon centers securing additional resources from state and local governments and/or the private sector through fees charged to clients for services. Client fees currently account for roughly 29 percent of the total cost of center operations.
- Skillnets (Ireland).** Skillnets is a private, nonprofit company established in 1999 to develop and implement publicly supported training initiatives. It was created as: “A direct response by the business community to the poor level of investment in training by Irish companies, particularly small companies...it has a dual purpose – to improve the current level, effectiveness and quality of training among those firms that already invest in training, and also to improve the incidence and level of training among firms where little training has taken place to date.” The organization primarily serves as a facilitator and funding agency, providing resources on a cost-sharing

basis to industry federations, business associations and other types of organizations to run “enterprise-led training networks” for companies that operate in the same sector or region and have similar training needs. These contracting organizations receive funding from Skillnets, assess the training needs of companies in the sector/region, develop and implement training plans, and handle all required administrative tasks. Enterprises participating in networks can be any size, including sole traders. Training networks are expected to cover at least 50 percent of the cost of network operations through fees for service. For its share, Skillnets relies almost entirely on annual allocations from the National Training Fund made available through the Department of Education and Skills (DES).¹⁶

- Human Resource Development Fund (HRDF - Malaysia).** The Pembangunan Sumber Manusia Berhad Act, 1992 provided for the imposition and collection of a levy whose proceeds would be deposited in a fund for the purpose of promoting the training and development of workers.¹⁷ In 2001, the Act was repealed and replaced with the Pembangunan Sumber Manusia Berhad Act 2001, which created a new corporation, registered under the Companies Act 1965 as a private company, to serve as trustee of the fund. Employers that have registered and paid the levy are eligible for financial assistance. Under most financial assistance schemes, companies draw down on their levy balance to pay for training provided by in-house staff or by external training providers; there is no government subsidy per se, but grants do represent a financial incentive. HRDF does, however, underwrite the cost of some types of training and related consultancies using monies transferred from the levy fund, retained earnings and/or government grants. Some, but not all,

¹⁶ “The National Training Fund (NTF) is resourced by a levy on employers of 0.7% of reckonable earnings in respect of employees in classes A and H employments, which represents approximately 75% of all insured employees.

¹⁷ Under the 1992 Act, responsibility for managing the fund was assigned to the Human Resource Development Council operating under aegis of the Ministry of Human Resources.

subsidies are directed toward SMEs. When provided, subsidies generally cover the full cost of services.

- **SPRING Singapore.** SPRING Singapore was established in 2002. It is a statutory organization, operating as a corporate body, under the Ministry of Trade and Industry (MTI). The statutory mandate is quite broad, reflecting the origins of the organization. SPRING Singapore is responsible for developing and promoting internationally recognized standards and quality assurance systems, overseeing the safety of consumer goods, and promoting economic development. The latter includes supporting “the growth of small and medium enterprises and any other enterprise requiring its assistance.” SPRING Singapore has established a number of financial assistance programs directed toward SMEs, including the Innovation Capability Voucher (ICV) scheme,

which can be used by companies to cover the cost of pre-scoped consultancy services and ICT systems offered by qualified service providers in Singapore. The voucher covers the full cost of the service.

All organizations have established boards that include government and employer representatives; only the charter for Skillnets requires employee representatives.

14. As shown in Table 3, all of the corporations have governing boards as required under the relevant statutes and regulations. In these cases, board members serve in a fiduciary capacity and are legally responsible for the overall management of the corporation. In the case of the MEP, the organization has an advisory board, which is formed to give advice, but has no legal authority or fiduciary duties.

Table 3. Type and Composition of Board

	Type of Board	Board Composition		
		Government	Employer	Employee
Manufacturing Extension Partnership (USA)	Advisory		X	
Skillnets (Ireland)	Governing	X	X	X
SPRING Singapore - ICV Scheme	Governing	X	X	
Human Resource Development Fund (Malaysia)	Governing	X	X	

15. Details on the governance structures are provided below:

- **Manufacturing Extension Partnership (USA).** Pursuant to legislation, the U.S. Secretary of Commerce established a National Advisory Board in 1996.¹⁸ The current charter tasks the 10-member board with providing advice with respect to MEP programs, plans, and policies.¹⁹ The board is appointed by the NIST Director; the charter calls for at least two members to be representatives of existing MEP centers and at least five to be owners/managers of small businesses in the manufacturing sector. Each MEP center is also required to establish an oversight board or advisory committee for the program, depending on the legal structure of the organization, with the majority of members coming from manufacturing
- **Skillnets (Ireland).** The Memorandum of Association for Skillnets calls for a 13-person board, composed of seven business/employer representatives, three employee representatives, and three government representatives named by the Minister of Education and Skills. Each of the organizations contracted to run a training network is responsible for establishing

a steering group comprised of “member company representatives” to oversee the network, including the procurement of training providers.

- **Human Resource Development Fund (Malaysia).** The corporation is governed by a Board of Directors appointed by the Minister of Human Resources. As stipulated in the legislation, the board must include a representative of the Ministry of Human Resources; a representative of the Ministry of Finance; three persons representing other key government agencies;²⁰ ten persons representing employer organization; and the chief executive officer of the corporation. The minister may name two more people to the board as his/her discretion. While HRDF has had representatives from the labor organizations in the past, the current board does not.
- **SPRING Singapore.** The legislation establishing SPRING Singapore calls for the establishment of a board of directors consisting of a chairman, the chief executive; and between six and 16 other members “from such sectors or classes of persons as the Minister may consider appropriate, including the Government, employers, trade unions, businesses, professionals

¹⁸ The MEP Advisory Board is authorized under Section 3003(d) of the America COMPETES Act (P.L. 110-69); codified at 15 U.S.C. 278k(e), as amended, in accordance with provisions of the Federal Advisory Committee Act, as amended, 5 U.S.C App.

¹⁹ NIST, Charter of the Manufacturing Extension Advisory Board, downloaded from www.nist.gov/mep/advisory-board-charter

²⁰ This currently include representatives of the Ministry of Higher Education, Economic Planning Unit; and Malaysia Productivity Corporation.

and the academic staff of the institutions of higher learning in Singapore.” As indicated on the SPRING Singapore website, the board currently consists of 14 members “from leading private sector companies as well as senior government officials.”²¹ There are no employee representatives on the current board.

The nature of training/consulting services available to enterprises varies across the schemes as does the locus of responsibility for determining which services to offer.

16. Table 4 identifies the entity responsible for determining which services will be offered to companies and indicates in general terms the type of services offered.

Table 4. Service Offerings

	Responsibility for Defining Service Offerings	Type of Services Offered
Manufacturing Extension Partnership (USA)	MEP Centers	Broad range of consulting and training services
Skillnets (Ireland)	Training Network Organizations	Broad range of training services
SPRING Singapore – ICV Scheme	SPRING Singapore	Specific set of pre-scoped consulting services and integrated solutions
Human Resource Development Fund (Malaysia)	NA	Virtually all types of training services available in the market

17. Details are provided below:

- Manufacturing Extension Partnership (USA).** The MEP centers provide consulting services and training related to sales and marketing, design and engineering, lean manufacturing, quality systems, environmental practices, and other subjects. As long as consistent with the mission of the MEP, centers are free to determine the mix of services to deliver to clients based on the market in their respective areas. Centers are also free to determine the composition of teams to work on client projects, drawing on a mix of internal staff and external consultants. While some centers have continued to serve in a broker capacity, over the years, reliance on internal staff has increased across the system: in 2012, center staff accounted for roughly 55 percent of the total hours devoted to client projects; in 2016, this figure reached 63 percent.
- Skillnets (Ireland).** Contracting organizations develop annual network training plans with the input of companies in the sector/region. As long as the plans are consistent with the overall mission of Skillnets, the organizations have wide latitude to determine the specific set of courses that will be offered during the year. In practice, courses offered under the auspices of networks are oriented toward competencies required for different occupations from line workers to programmers, sales personnel, supervisors and general managers. They cover a wide range of subjects gauged to different levels of skill qualification and vary from one-hour seminars to two-year, part-time degree programs. Skillnets also offers a series of management development courses – called ManagementWorks – through a wholly owned subsidiary. All training courses offered by networks and

Skillnets are delivered by external training providers retained through a competitive tendering process.

- Human Resource Development Fund (Malaysia).** Under most HRDF financial assistance schemes, companies are responsible for identifying the training needs of their own employees and organizing appropriate training programs. There are virtually no restrictions on the type of training undertaken by companies. Training can be delivered by in-house personnel or external training providers. Training providers are required to register with HRDF, demonstrating that they have a permanent office in Malaysia with at least one local permanent trainer and one permanent support staff. This is primarily for administrative purposes; there is no certification of the competency of providers. HRDF is in the process of establishing a system (“Star Rating”) to rate training providers
- SPRING Singapore.** Eligible services are defined by SPRING Singapore. Each voucher – currently with a value of S\$5,000 – may be redeemed for one of the pre-scoped consultancy service or “integrated solutions” from a roster of pre-qualified service providers selected by SPRING Singapore. Services providers that are interested in participating in the scheme are required to submit applications in response to periodic calls issued by SPRING Singapore. Effective 1 January 2017, management consultants are required to be certified by an independent body in order to participate in the ICV program. The organization appointed three certification bodies to develop and run certification programs aligned with a specific standard – TR 43:2015. The standard sets out the “minimum acceptable professional standards and practices of individual management consultants. It defines the

²¹ <https://www.spring.gov.sg/About-Us/BOD/Pages/corporate-governance-policy.aspx>

consultancy process, specifies the competency and ethical requirements of a professional consultant and outlines the scope for continuous professional development of consultants.” Certification does not address the consultant’s expertise in particular subjects matter, e.g., financial management, HR management, or quality management. Outreach for the ICV and other financial assistance schemes is done primarily through 12 SME Centers established by SPRING Singapore. Six of these centers are operated

by the organization; trade associations and chambers of commerce manage the others under agreements with SPRING Singapore.

The schemes have different policies with respect to cost-sharing and price subsidies.

- The policies of the different schemes with respect to cost-sharing and price subsidies are summarized in Table 5.

Table 5. Cost-Sharing and Price Subsidy Policies

Enterprise Cost-Sharing	
Manufacturing Extension Partnership (USA)	Enterprises cover roughly 30% of the total operating cost of MEP Centers. Specific services are priced comparably to similar services available in the market
Skillnets (Ireland).	Enterprises cover roughly 50% of the total operating costs of the training networks. Specific training courses are sometime priced at a discount for members.
SPRING Singapore - ICV Scheme	The voucher provided by SPRING Singapore is equivalent to the price charged for services, i.e., services are 100% subsidized.
Human Resource Development Fund (Malaysia)	Under most financial assistance schemes, companies pay the full cost of training through debits to their levy balances. Prices are set in the market. However, HRDF fully subsidizes some types of services for SMEs.

- Details are presented below:

- Manufacturing Extension Partnership (USA).** The 1988 legislation mandated that federal funding cover no more than 50 percent of the operating costs of MEP centers —referred to as a 1:1 cost share—during the first three years of operation. It required that the ratio of non-federal to federal funding increase to 3:2 in the fourth year and 2:1 in subsequent years. Centers are required to generate the remaining share of the budget through an unspecified combination of non-federal grants (cash and in-kind contributions) and fees charged to clients. The subject of the requisite cost-share has been a subject of discussions almost since the inception of the program, taking on added intensity with the economic downturn in 2008 and resulting stress on state budgets. In early January 2017, legislation was signed into law setting the cost share requirement to 50 percent (1:1 match).

Looking at 2016, MEP centers received roughly US\$106 million from NIST, which accounted for 41.5 percent of their total revenue of roughly US\$255 million. A mix of cash and in-kind contributions from state government, local government, and other funders accounted for 29.4 percent of total revenue. The remaining 29.1 percent of income was generated through client fees and other program activities. It should be noted that some clients drew on training and other types of grants from state governments to cover client fees paid to the MEP centers; however, the magnitude of these additional public subsidies is unknown.

Neither the original or amended legislation includes a threshold for the revenues that centers are

required to generate through client fees. To a great extent, pressure to generate fees is driven by the amount of non-federal grants available to meet match requirements. MEP centers have discretion in establishing a fee structure for services; most appear to charge fees that are comparable to those for similar services in the market. Setting fees at prevailing rates in the market is driven by revenue concerns as well as pressure to avoid unfair competition with private, for-profit service providers.

- Skillnets (Ireland).** Under the policy adopted in 2010, Skillnets funding for training networks is intended to cover no more than half of the total cost of network activities during the course of the year, including the cost of network management and administration, applicable overhead, and direct training costs (“programme costs”). The contracting organization is required to generate matching funds through membership dues, course fees and/or sponsorships. All matching funds must be in the form of cash.

Responsibility for setting prices for training courses rests with contracting organizations. Some, but not all, networks advertise different prices for members and non-members for courses offered under the auspices of Skillnets-funded networks; quoted prices for members are typically 20 to 25 percent lower than for non-members. It should be noted that some organizations also charge membership fees, which would partially offset (and explain the reason for) the discounted prices. The price charged for ManagementWorks courses are set by Skillnets. The fee structure takes into account a number of factors, including (a) the market rate for similar programs, (b)

the cost to Skillnets of procuring the programs, and (c) the level of funding available to Skillnets to subsidize the courses.

- **Human Resource Development Fund (Malaysia).** There is no cost-sharing per se. Under the principal financial assistance schemes, companies pay market prices for training services, using monies in their levy accounts. Employers are reimbursed for 100 percent of allowable costs associated with the training, including course fees, training materials, training venues, daily allowances, and transportation.
- **SPRING Singapore.** The prices charged by service providers for pre-scoped services is fixed by SPRING Singapore and is equivalent to the value of the voucher.

Organizations have simplified the application process and the disbursement of funds.

20. HRDF and SPRING Singapore have explicit procedures that companies need to follow to apply for grants and receive funding:

- **Human Resource Development Fund (Malaysia).** Employers who pay the levy are eligible for grants to offset the cost of provide training to Malaysian citizens. For the most part, prior approval for training must be obtained from HRDF in order to be eligible for reimbursement. Companies are required to apply for financial assistance online, identifying the training provider, location of training activity, the type and duration of training, level of certification, list of trainees, and estimated cost.²² Approval is rarely, if ever, denied.²³

Companies are eligible for payment under the financial assistance schemes only if the trainees complete training. To receive payment, employers must submit an online claim form after the completion of the training program, along with relevant receipts. Claims are paid via check or e-disbursement to the employer or training provider depending on the scheme.

- **SPRING Singapore.** All local SMEs can apply for ICV if they meet the following criteria: registered and operating in Singapore; have a minimum of 30% local shareholding; and have group annual turnover of not more than \$100 million or group employment of not more than 200 employees. The application process is simple. Companies are asked to review the list of eligible projects and contact one of the registered service providers. The service provider must agree to undertake the project before the company submits an application. The two-page application form must be submitted via the ICV Online Portal. Applications

are processed within six weeks upon submission of all required documentations and successful applicants are notified by email.

Companies must complete projects and submit claims within six months from the application approval date. For consultancy projects, SPRING Singapore makes the payment directly to the service provider. For integrated solutions, payment is made to the company, who is then responsible for paying the system vendor.

21. Neither MEP nor Skillnets disburse funds directly to enterprises. In both cases, companies seeking assistance simply purchase consulting/training services offered through the intermediaries institutions and pay them directly – there is no application process per se and no eligibility restrictions.²⁴

In general, schemes have been hard pressed to secure the participation of eligible SMEs, particularly enterprises at the smaller end of the spectrum.

22. Results of the schemes in terms of attracting SME participation are discussed below, based on the particular definition of an SME used by each organization:

- **Manufacturing Extension Partnership (USA).** According to publicly available information, MEP Centers had “interactions” with 25,445 manufacturers in FY2016. However, many of these interactions involved program outreach, short meetings, and other brief encounters. More detailed data show that centers had substantive engagements with 7,438 unique clients in 2016 as shown in Table 6.

22 HRDF System: User Guide for Employers, undated

23 Correspondence

24 The application process and disbursement policies for intermediary institutions funded by MEP and Skillnets are discussed in the Annex A.

Table 6. Distribution of Companies Participating in MEP by Employment

Number of employees	Frequency	Percentage
Less than 20	2,203	30%
20-49	1,794	24%
50-99	1,330	18%
100-249	1,315	18%
250-499	504	7%
500 or more	206	3%
TOTAL (A)	7,438	100%

Notes (a) Total number of clients includes 36 for which employment data are missing.

In comparison, there are roughly 297,000 manufacturing establishments in the United States; 99 percent of these have fewer than 500 employees.²⁵ As such, the overall penetration rate in the NIST MEP target population is on the order of two percent. However, the penetration rate varies by establishment size. For example, centers reached barely one percent of manufacturing establishments with less than 20 employees, but provided services to almost 10 percent of those with 250-499 employees.

- **Skillnets (Ireland).** A total of 14,263 companies participated in training programs supported by Skillnets in 2016 as shown in Table 7. Almost half employed less than ten people.

Table 7. Distribution of Companies Participating in Skillnets by Employment

Number of employees	Frequency	Percentage
Less than 10	6,946	49%
10-49	3,979	28%
50-249	2,231	16%
250 or more	1,108	8%
Total	14,263	100%

Notes: (a) Figures assume that there is no overlap among programs.

Source: Nexus Associates based on data provided by Skillnets

Participation in Skillnets is open to all businesses in Ireland. According to the Central Statistic Office, there are roughly 250,000 enterprises operating in Ireland – of which, 99.8% are defined as SMEs (<250 employees). Given the figures cited above, Skillnets supported the delivery of training to roughly six percent of all enterprises in the country in 2016. Networks generally have a relatively higher rate of participation from companies with more than 50 employees within their sectors and regions. The lowest level of participation (3 percent) is from micro-enterprises (<10 employees), which account for 92 percent of all enterprises operating in the country.

- **Human Resource Development Fund (Malaysia).** An estimated 12,000 SMEs participated in financial assistance schemes in 2016; no further data on the characteristics of these firms are available. Given data issues, the precise penetration rate is unknown, but according to the Department of Statistics there are roughly 135,000 small and medium-scale enterprises in Malaysia.
- **SPRING Singapore.** The number of SMEs using the ICV scheme reached 19,500 in 2015; no further data on the characteristics of these firms are available. According to the latest government statistics, there are 216,900 enterprises in Singapore – 99 percent of which are SMEs, defined as enterprises with up to 200 employees or operating receipts of up to \$100 million.²⁶ This suggests that less than 10 percent of existing SMEs participated in the ICV scheme in 2015.

²⁵ County Business Patterns.

²⁶ <http://www.singstat.gov.sg/statistics/visualising-data/infographics/economy>

CONCLUSIONS

23. One should be cautious about drawing conclusions concerning good practice given the tremendous variation in the design of funding schemes and the lack of reliable and consistent performance data. That said, the case studies and broader literature point to several important elements that merit consideration when designing interventions.

- **Representation of constituents on governing boards or other advisory bodies.**

In many respects, governance revolves around the structure and processes put in place to ensure that policy decisions reflect the views of constituents. Constituent representation on governing boards or advisory bodies serves as a means to obtain important information on the needs of target populations, promote stakeholder buy-in, and hold organizations accountable to the populations they serve. All of the organizations selected for the case studies include business representatives in governance structures, but only one has labor representatives. Broadening representation to include labor may help ensure that the interests of employees are heard and reflected in policy. However, having members with diverging interests on boards can make the decision-making process more difficult. Developing a common understanding of the mission of the organization and fostering open communication may help mitigate potential conflicts.

- **Adequacy of funding.**

Government's contribution to funding schemes can be financed through general revenue raised through various taxes and fees and/or a special levy, typically in the form of a payroll tax. In practice, special levies have been used only to fund training; there are no examples of levies being established to underwrite the cost of consulting services. The principal advantage of training levies is the ability to raise resources expressly for the purpose of funding training and insulate those funds from competing demands arising during the normal budgetary process. However, the instrument is not appropriate for all countries, particularly for those with weak economies, large informal sectors, and poor administrative capabilities. Under these circumstances the amount of revenue generated is likely to be limited given the small tax base and high

rate of non-compliance.²⁷ Even where appropriate, training levies can be unpopular with employers and some have been abandoned as a result.²⁸ Finally, it is important to note that while employers are responsible for paying the training levy, the actual burden of a payroll tax (tax incidence) tends to be borne by workers in the form of lower wages.²⁹ In the case of general revenue, the incidence is broader, reflecting the overall structure of the tax system.

The amount of public funding allocated to programs has direct implications for the scale of intervention. In this regard, many schemes only reach a small percentage of the target population due, in part, to budgetary constraints. Increasing penetration significantly would require considerably more resources than currently afforded.

- **Service offerings.**

The case studies demonstrate different approaches to defining what services to offer. At one end of the spectrum, HRDF allows enterprises to use levies for virtually any type of training available in the market. This laissez faire approach promotes broad participation, but it may not be optimal in terms of achieving policy objectives. It relies on the ability of companies to choose services that are likely to yield the greatest impact. At the other end of the spectrum, SPRING Singapore only provides financial support for a relatively narrow set of pre-scoped services that are defined by SPRING Singapore with input from service providers and potential customers. This more proactive approach may have greater impact, presuming that institutions have accurate knowledge of the relationship between services and desired policy objectives. However, a restriction on eligible services limits participation to enterprises that are interested in those particular services.

- **Price subsidies.**

The price charged for training/consulting services has an important bearing on whether enterprise elect to use them – all other things equal, lower prices inexorably lead to higher demand. The impact of any price subsidy offered through a scheme on demand depends on its magnitude and the price elasticity of demand.³⁰ In this regard, both SPRING Singapore and HRDF provide direct cash

27 UNESCO (2017) presents a methodology to forecast the amount of revenue that could be raised by means of a training levy.

28 In this regard, Smith and Billett (2006) note, "Complaints about the overly bureaucratic nature of compulsory levy schemes have contributed to their abolishment in the United Kingdom and Australia."

29 Most labor economists believe that the supply of labor is much less elastic than demand. As a result, workers, rather than firms, bear the brunt of the burden. Although there is some disagreement regarding the exact amount of this shift, some studies suggest that workers, through a lower competitive wage, pay for as much 90 percent of payroll taxes.

30 Price elasticity of demand is a function of three factors: i) the extent to which a service is considered to be a necessity; ii) the price of the service as a proportion of business income, and iii) the availability of substitute services to satisfy a given need. All other things equal, price subsidies are likely to have a bigger effect on the quantity demanded for big-ticket services that companies feel they can do without either because they do not perceive a need or the need can be satisfied some other way.

transfers to enterprises, which bring the effective price of services to zero.^{31,32} While full subsidization is likely to spur the greatest demand, some companies may not require this level of subsidy. If subsidies are not required, the transfers represent a windfall to the recipients, consuming public resources that could have been used to better effect elsewhere (deadweight loss). The approach to subsidies in the cases of MEP and Skillnets is more indirect. The extent of the price subsidy depends on the cost-sharing requirements set by the funding agency and the particular pricing strategy adopted by intermediary institutions. While the actual amount of the price subsidies is not known, it appears to be fairly limited in both cases – the prices paid by enterprises for services offered by institutions are equal to or slightly below market prices. While this approach may promote allocative efficiency, some enterprises may not be willing to pay the price charged by the intermediary institutions and elect to forego potentially beneficial services. While the pricing of services is critical, none of the schemes examined as part of this study appear to have adopted explicit criteria for establishing subsidies or undertaken research to determine how enterprises are likely to react to different prices.

- **Mechanisms to lower transaction cost.** The price of a service is only one component of its cost; enterprises also incur the cost of searching for qualified services providers, executing and managing contracts, and dealing with associated administrative tasks. Lowering these costs can also lead to higher demand. The case studies demonstrate various mechanisms that can be used to reduce transaction costs borne by enterprises, including the following: i) the development of standard services offered at fixed prices; ii) extensive outreach, often done in concert with business associations, to inform enterprises about the availability of services; iii) simplified administrative procedures with online applications and claims submission; and iv) assignment of responsibility for contracting third-party service providers to intermediate institutions. With respect to the first mechanism, the development of standardized services offered at a fixed price removes the need for negotiations between services providers and enterprises; however, it eliminates the potential for tailoring services to the needs of particular firms.
- **Mechanisms to address information constraints.** Demand depends, in part, on the availability of dependable information on the quality of services offered by providers. MEP Centers and Skillnets training networks are selected through a competitive

process and are responsible for retaining third-party service providers, if any, through proper procurement procedures. This helps ensure that service providers are qualified; however, the effectiveness of this approach with respect to stimulating demand depends on the institutions' reputation as a trusted partner among prospective participants. Efforts to demonstrate the quality of service providers through a certification system as in Singapore may be more effective assuming that standards are well designed, certification procedures are reliable and transparent, and the system is understood and accepted by potential customers. Building such a system comes with considerable cost.

- **Control systems.** Regardless of the particular design, all funding schemes involve the expenditure of public monies. Organizations responsible for managing schemes have a fiduciary duty to ensure that monies are used properly. This requires sound control systems and public transparency. To a varying extent, all of the organizations selected for case studies established safeguards through policies and procedures related to provider procurement, grant applications, claims verification, beneficiary reporting, and financial audits. This kind of oversight carries cost for institution and participating enterprises. The issue for every organization is striking the right balance. The cost of oversight needs to be considered in relation to the risk of abuse and the scale of potential losses.
- **Program evaluation.** More attention needs to be paid to conducting rigorous process and outcome evaluations. The case studies demonstrate the difficulty of getting a large percentage of SMEs to participate in programs. However, low participation in particular funding schemes may be due to myriad factors, including poor outreach efforts, the reluctance of business owners to seek assistance, the lack of information on the nature and quality of services, a mismatch between service offerings and demand, the availability of comparable services at a similar cost, high transactions costs, insufficient financial incentives, or, as noted above, budgetary constraints that limit the scale of the program. Evaluations should be used to identify the specific factors that may limit demand for certain services in particular markets and determining an appropriate course of action. Moreover, much greater effort needs to be placed on assessing the effectiveness of schemes using rigorous qualitative and quantitative methods to identify the services that are likely to yield the greatest impact with respect to stated policy objectives.

31 In the case of SPRING Singapore, vouchers cover the full cost of pre-scoped services. Under HRDF's main financing schemes, enterprises are charged the market price for services by training providers and are then reimbursed in full from levy accounts. In effect, this has the same effect as a subsidy. Once the levy is paid to HRDF it is a sunk cost – the payment has already been incurred and cannot be recovered (without undertaking training). In making the subsequent decision on whether to train employees, companies consider the incremental cost of training relative to benefits. In effect, the incremental costs are zero given full reimbursement from the levy.

32 In other types of schemes that have match requirements, the effect of the subsidy depends on the extent to which service providers hike prices in response to the scheme.

ANNEX A. CASE STUDY REPORTS

NIST MEP (UNITED STATES)

OVERVIEW

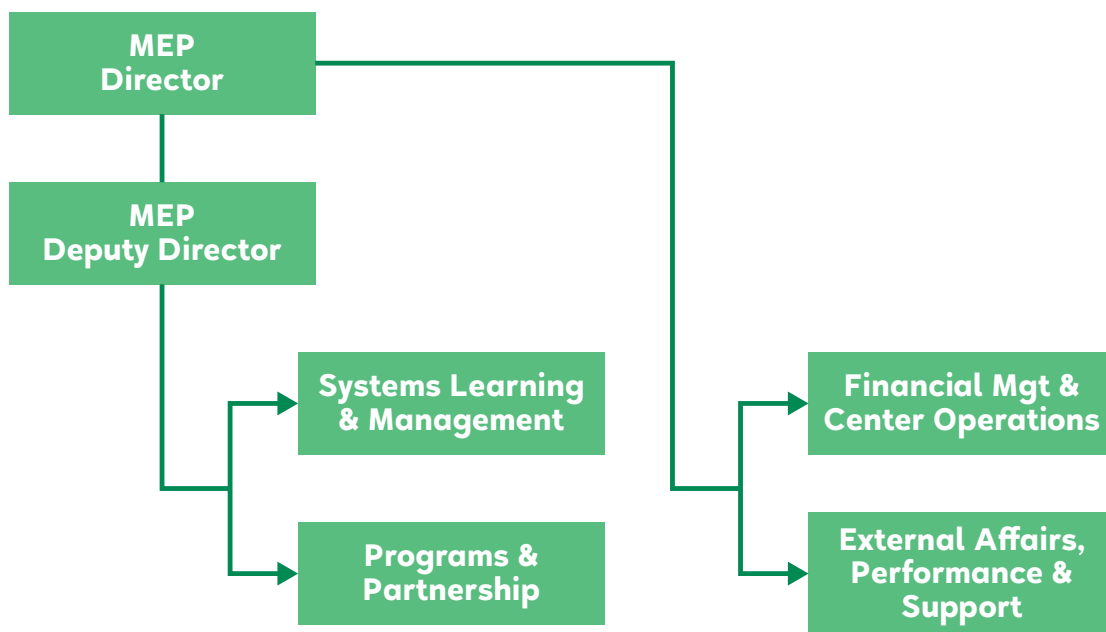
24. The Manufacturing Extension Partnership (MEP) program was established by the Omnibus Trade and Competitiveness Act of 1988³³ and is administered by the National Institute of Standards and Technology (NIST) within the U.S. Department of Commerce (DOC).² The program’s objective is to enhance the productivity and technological performance of manufacturers in the United States with fewer than 500 employees. The MEP program operates through a network of affiliated organizations selected through open competition. Located throughout the United States and in Puerto Rico, MEP Centers provide a broad range of technical assistance and training services to clients, drawing on internal staff and contracted service providers. Federal funding provided to centers is contingent upon

centers securing additional resources from state and local governments and/or the private sector through client fees. Client fees currently account for roughly 29 percent of the total cost of center operations.

GOVERNANCE, MANAGEMENT AND STAFFING

25. Responsibility for the MEP program is vested in NIST – a federal agency – within the Department of Commerce. The MEP Director reports to the Director of NIST, who in turn reports to the Secretary of Commerce. An organizational chart for NIST MEP is presented in Figure A1. In addition to a Director and Deputy Director, the MEP has 49 staff across four divisions. All staff are federal employees.

Figure A1. Organizational Chart



Source: NIST MEP

26. Pursuant to legislation, the Secretary of Commerce established a National Advisory Board in 1996.³⁴ Its charter has changed over time: the most recent version adopted in 2015 tasks the 10-member board with providing advice with respect to MEP programs, plans, and policies.³⁵ The board is appointed by the NIST Director; the charter calls for at least two

members to be representatives of existing MEP centers and at least five to be owners/managers of small businesses in the manufacturing sector. Board members serve three-year terms and are limited to two consecutive full terms. The charter calls for the board to meet at least three times per year.

33 P.L. 100-418 § 5121(a) codified at 15 U.S.C. § 278k. The original legislation referred to the Manufacturing Technology Centers program, which was administered by National Bureau of Standards (NBS). The first three centers were established in 1989. In 1990, NBS was reorganized and renamed as NIST. In 1998, the program was renamed the Manufacturing Extension Partnership program and in 2004, the program was designated as the Hollings Manufacturing Extension Partnership.

34 The MEP Advisory Board is authorized under Section 3003(d) of the America COMPETES Act (P.L. 110-69); codified at 15 U.S.C. 278k(e), as amended, in accordance with provisions of the Federal Advisory Committee Act, as amended, 5 U.S.C App.

35 NIST, Charter of the Manufacturing Extension Advisory Board, downloaded from www.nist.gov/mep/advisory-board-charter

27. Each MEP center is also required to establish an oversight board or advisory committee for the program, depending on the legal structure of the organization, with the majority of members coming from the manufacturing sector. For example, the Michigan Manufacturing Technology Centers (MMTC) – one of the first manufacturing extension centers established in the United States – is governed by an 11-member fiduciary board, which includes representatives of manufacturing firms, business associations, not-for-profit research organizations, and the Michigan Economic Development Corporation.³⁶

MEP CENTERS

28. The first three MEP centers were established in 1989 in response to a notice of federal funding opportunities. Four more were added between 1990 and 1992. By 1996, MEP centers were located in every state and in Puerto Rico (some states had multiple centers). Most centers have continued to receive federal funding over the ensuing years. However, awards for eight centers were reopened to competition between 2009 and 2013. In five instances this was done because the existing centers faced financial difficulties, which resulted in their being shut down. In the three other instances, “the centers decided that their respective organizational missions no longer supported the operation of a MEP center and, as a result, each of these organizations voluntarily ended their respective MEP cooperative agreement.”³⁷

29. Until recently, funding for centers was based on the historical amount awarded to each center when it was first established. This led to substantial differences in the amount of federal funding provided to centers, which did not necessarily reflect differences in the size of the target population or the cost of service delivery. Data provided by NIST to the GAO showed that the amount of annual funding awarded to centers in 2013 ranged from \$82 to \$972 per manufacturing firm in the designated service area (mean of \$333). The GAO concluded, “NIST’s cooperative agreement award spending is... inconsistent with the beneficiary equity standard,” which calls for the adoption of a funding allocation formula that distributes funds according to population needs and the cost of providing services, so that each service area can have sufficient funding to provide the same level of services to those in need. In response, NIST MEP began implementing a new funding allocation formula in 2014, which is based primarily on the number of manufacturing establishments in different states. Specifically, the amount of the cooperative agreement award for each state is proportional to the state’s share of

manufacturing establishments (<500 employees) in the United States,³⁸ with a minimum funding allocation of US\$500,000 per center per year.

30. In 2014, NIST began a process of opening all awards to competition in order to provide a more equitable allocation of funds across service areas, better align the centers with state economic development strategies, and reduce cost-share requirements (see below). The process was completed in 2017. At this point there are 51 MEP centers – one in each state plus Puerto Rico. The legal entities entering into cooperative agreements with NIST are non-profit organizations, public universities, or state agencies as shown in Table A2. All told, MEP Centers (including subrecipients) employ some 1,300 people in roughly 500 office locations.

Table A2. Legal Structure of Entities with Cooperative Agreements

Type	Number
Non-profit organization	26
501(c)(3)	24
501(c)(4)	1
501(c)(6)	1
Public university or college	17
State agency	8
Total	51

Source: NIST MEP (2017)

31. Centers provide assessments, consulting services and training related to sales and marketing, design and engineering, lean manufacturing, quality systems, and environmental practice. As long as consistent with the mission of the MEP, centers are free to determine the mix of services to deliver to clients based on the market in their respective areas. Centers are also free to determine the composition of teams to work on client projects, drawing on a mix of internal staff and external consultants. While some centers have continued to serve in a broker capacity, over the years, reliance on internal staff has increased across the system: in 2012, center staff accounted for roughly 55 percent of the total hours devoted to client projects; in 2016, this figure reached 63 percent. Finally, centers have discretion in establishing a fee structure for services; most appear to charge fees that are comparable to those offering similar services in the market. Setting fees at prevailing rates in the market is driven by revenue concerns as well as pressure

36 The Michigan Manufacturing Technology Center (MMTC) was established in 1991 as the Industrial Technology Institute. MEDC is the state economic development agency that provides MMTC’s state support.

37 GAO (2014).

38 The number of manufacturing establishments is based on data from County Business Patterns, 2012.

to avoid unfair competition with for-profit service providers. The added value from the centers arises from service development, outreach activities, and project management that help to reduce transaction costs as well as its reputation as operating in the interests of clients.

32. For example, MMTC covers the entire state of Michigan with a staff of 62 people (full-time equivalent). This includes 46 employees of MMTC located at the organization's headquarters/regional office in southeast Michigan and another 16 people employed by four MMTC affiliates in other regions of the state.
33. Based in universities or other types of not-for-profit organizations, the regional affiliates are subrecipients of the NIST MEP grant, providing services to manufacturers under agreement with MMTC. MMTC and its affiliates offer a combination of classroom training and consulting services. In southeast Michigan, MMTC relies on internal staff to deliver roughly 90 percent of the hours devoted to client services; outside consultants are retained

on an as-needed basis for the remaining 10 percent, primarily for non-core services. The regional affiliates tend to rely relatively more on outside consultants: the proportion of services performed by internal staff varies from 75 percent to just five percent.

34. Training and consulting services focused on quality systems through 1998. However, over time, the range has expanded to include market research, strategy development, website development/optimization, lean production, cost identification and management, supplier matching, environmental management, innovation engineering, leadership development and other topics. Some consulting assignments follow a standard approach, other are fully customized to meet the specific needs of particular clients. MMTC charges roughly \$1200-\$1800 per person-day for consulting assignments. The prices for training courses vary depending on course duration and subject matter as shown in Table A3. In general, fees charged by the organization tend to be in the low to mid-range of the market.

Table A3. MMTC Course Schedule - 12 Sept 2017 to 12 Oct 2017 (a)

Title	Description	Duration	Fee
ISO 9001:2015 Internal Auditor	Course focuses on information necessary for conducting internal quality audits.	24 hours	\$995/participant
IATF 16949 Requirements for Existing Internal Auditors	Course equips participants with the knowledge and skills needed to assess and report on the organization's Quality Management System (QMS) with regards to changes in Standard from ISO/TS 16949 to IATF 16949.	16 hours	\$795/participant
Supervisory Skills	Course equips participants with the knowledge and skills needed become effective leaders and supervisors.	32 hours	\$975/participant
Core Tools: APQP, PPAP, & FMEA	Course blends the three core tools of APQP, PPAP and FMEA and guides participants through important steps of the launch process.	16 hours	\$795/participant
Sales Acceleration Workshop	Course offers a hands-on, interactive approach that addresses the most common and challenging obstacles facing sales people.	16 hours	\$799/company (max. 2 participants)
8D/Root Cause Analysis	Course focuses on root cause analysis and problem-solving tools. Both internal (yield issues) and external (warranty, field failure, customer complaint) problems are introduced.	8 hours	\$395/participant
AS9100D Transition User Group	Course is designed to teach transition team members how to develop and implement the requirements of AS9100D.	32 hours	\$6,450/company (max. 3 participants)
ISO 13485:2016 Requirements for Existing Internal Auditors	Course helps participants understand the basics of a process-based Quality Management System as well as the specifics of the ISO 13485.	8 hours	\$495/participant
IATF 16949 Transition User Group	Course is applicable for organizations that are transitioning from revision ISO/TS 16949 to IATF 16949	32 hours	\$6,450/company (max. 3 participants)
ISO 14001:2015 Internal Auditor	Course provides information necessary for conducting internal quality audits.	16 hours	\$795/participant
IATF 16949 Management Transition	Course informs participants how IATF 16949:2016 will impact their current Quality Management System (QMS).	4 hours	\$395/participant
Six Sigma Green Belt	Course is designed for technical staff to attain Six Sigma Green Belt certification. The classroom overview of Six Sigma concepts is followed by a guided project through which the concepts and tools are applied.	40 hours	\$2,800/participant
ISO 9001:2015 Management Transition	Course informs participants how ISO 9001:2015 will impact their current Quality Management System (QMS).	4 hours	\$395/participant
ISO 14001:2015 Requirements for Existing Internal Auditors	Course equips participants with the knowledge and skills needed to assess and report on ISO 14001:2015.	8 hours	\$495/participant
AS9100D Requirements for Existing Internal Auditors	Course equips participants with the knowledge and skills needed to assess and report on the organization's Aerospace Quality Management System (AQMS) with regards to changes in Standard from AS9100C to AS9100D.	8 hours	\$495/participant
GD&T Fundamentals	Course will help participating explain and evaluate the benefits of GD&T.	16 hours	\$795/participant

Notes: (a) Some courses are offered multiple times during the period.

OPERATING POLICIES

APPLICATION PROCESS

35. As part of the re-competition for centers, NIST announced a series of federal funding opportunities (FFO) in 2015 and 2016, which were each targeted toward a set of designated states. Each FFO specified the specific states that were eligible for funding under the particular announcement and indicated that amount of the anticipated award to each state based on the funding allocation formula. Applicants were required to submit a proposal, following detailed guidelines issued by NIST, which described the objectives and overall strategy of the center, governance structure, key personnel, outreach and service delivery activities, role of subrecipients and other participating entities (including letters of commitment), detailed budget and financial plan, and various mandatory forms. Proposals were required to be transmitted electronically via a federal government website.
36. Proposals were reviewed by at least three independent reviewers and scored based on specified criteria. Selection was done by the NIST Deputy Director with final approval made by the designated NIST Grant Officer.

COOPERATIVE AGREEMENTS

37. Under the approach adopted in 2015, NIST has entered into cooperative agreements with MEP Centers, which have terms of five years.^{39,40} While these are multi-year agreements, funding is approved on an annual basis with continued funding beyond the first year contingent on satisfactory performance and the availability of federal funds and commensurate cost-share. At the end of the initial five years, NIST has the ability to renew the agreements on non-competitive basis for another five-year period.⁴¹

38. The cooperative agreements incorporate by reference the proposals submitted by applicants to NIST and include general terms and conditions. MEP Centers are required to submit an annual operating plan, including a detailed budget, in keeping with the approved funding proposal. The content and format of the required operating plans are specified in MEP guidelines.

COST-SHARING POLICY

39. The 1988 legislation mandated that federal funding cover no more than 50 percent of the operating costs of MEP centers—referred to as a 1:1 cost share—during the first three years of operation. Centers were required to generate the remaining share of the budget through a combination of non-federal grants (cash and in-kind contributions) and fees charged to clients.⁴² Minimum cost share requirements must be met annually; there can be no carryover of excess cost share from one year to the next. The legislation required that the ratio of non-federal to federal funding increase in the fourth year to 3:2 and in the fifth year to 2:1, i.e., for every dollar of federal funding, centers needed to generate an additional two dollars from other sources. Further, under the 1988 legislation, federal funding was scheduled to end once a center had been in operation for six years. The sunset provision was eliminated through a legislative amendment in 1998.⁴³ As noted in an MEP Advisory Board report, “Operational experience showed that the initial concept of a center becoming financially self-sufficient while serving manufacturers, particularly small and medium sized manufacturers was not feasible.”⁴⁴
40. The subject of the requisite cost-share has been a subject of discussions for some time, taking on added intensity with the economic downturn in 2008 and resulting stress on state budgets. In 2010, Congress directed the US Government Accounting Office (GAO) to submit a report on the cost share requirements of the MEP program to the legislature.

39 Cooperative agreements are like grants in that they are used to provide financial support to a recipient in order to accomplish a public purpose as authorized by law. They are used when the federal agency providing the assistance has more involvement with the recipient in carrying out the activity being funded. Cooperative agreements and grants differ from procurement contracts in that a procurement contract is to be used by an agency when the principal purpose is to acquire property or services for the direct benefit or use of the United States government, as opposed to when the principal purpose is to provide assistance to accomplish a public purpose as authorized by law.

40 NIST has also awarded competitive grants to some MEP centers in recent years in addition to cooperative agreement awards to undertake specific activities, including pilot of new initiatives.

41 Prior to the re-competition, cooperative agreements had a term of one year and could be renewed annually for an indefinite period. Renewal was contingent upon positive performance evaluation, taking into account various factors including a qualitative assessment of the following factors: (1) the center has an actionable and measurable strategy that is built with purposeful alignment to the MEP program's strategic plan; (2) the center maintains an appropriately balanced portfolio of products and services that address all strategic areas; (3) the center is able and willing to experiment with and adopt new products and services, and has adopted a culture of continuous learning and development; (4) the center works with proactive clients and restarts reactive clients, and creates a sense of urgency that transitions reactive clients to proactive; and (5) the center is willing and able to write success stories that reflect a mix of the strategic plan areas regularly and on-time.

42 In-kind contributions may consist of contributions of personnel, facilities, equipment, software, and other related contributions up to a maximum of one-half of recipients' total cost-share requirement.

43 Technology Administration Act - amendment of TITLE 15 - Commerce and Trade, Chapter 7 - National; Institutions of Standards and Technology, Sec 278k.

44 MEP Advisory Report, Analysis and Findings of the Cost Share Requirements for the Hollings Manufacturing Extension Partnership Program, September 23, 2013.

The report noted several positive effects of requiring other parties to contribute to the cost of the program, including greater alignment with the specific needs of manufacturers in the respective service areas and with the broader public interests of state and local government.⁴⁵ The report also called attention to negative effects, including the cost of securing grants, maintaining partnerships and dealing with financial administration (particularly with respect to accounting for in-kind contributions) as well as greater pressure to work with larger companies that can afford higher fees and to focus on repeat business with existing clients. The report noted that the cost-share requirement for the MEP program was higher than other programs established by the Department of Commerce,⁴⁶ but stated, “We are unable to provide recommendation on how best to structure the cost share requirement ... because we could not identify criteria or another basis for determining the optimal cost structure for this program.”⁴⁷

41. Soon after the GAO report was issued, Congress directed the Secretary of Commerce to draft criteria that could be used to establish cost share provisions for the MEP program.⁴⁸ The NIST MEP Advisory Board was charged with undertaking a review of the cost share requirement and providing recommendations to the NIST Director by 30 September 2013. Significantly, the resulting report noted that states had reduced funding for 35 centers between 2007 and 2012; and 12 centers received no state funding in 2012. While the board concluded that some level of nonfederal cost share was constructive, it reiterated many of the points raised in the GAO report: “The current level of cost share requirement drives centers to spend time and effort to seek sources of cost share, to focus on larger firms who can pay fees and on multiple projects with repeat clients, and imposes a significant burden to obtain, manage and report on in-kind cost share.” It went on, “... [lowering] the cost share requirement would have numerous beneficial impacts, including: (a) serving more companies, (b) making cost share available for other program investments, (c) focusing on delivering services to manufacturers that are affordable, (d) decreasing the amount of time seeking less valuable cost share, (e) better serving the needs of regional stakeholders, (f) relieving administrative burden, and (g) promoting innovation, technology transfer and acceleration. The notion that the reduction in the cost share requirement would lead to an increase in the number of clients seems to be based on the presumption that less fundraising activity and lower administrative burdens would save money that

would be reallocated to service delivery. However, no supporting financial analysis was provided. The advisory board recommended that the cost share requirement be set at 1:1.⁴⁹ The board report does not offer any rationale for setting the ratio at this particular level beyond noting that other federal programs have adopted it.

42. The FFO in 2015-2016 maintained the original federal cost-share of 50% in the first three years, 40% in Year 4, and 33% in Year 5 and beyond. In the open competition, all centers were subject to the 50% cost share, regardless of whether they had been party to a cooperative agreement in the past. In effect, this reset the clock to Year 1 for all centers.
43. During this period, efforts were made to permanently change the federal cost-share to 50 percent of the centers’ annual operating costs over the life of the centers. This was finally accomplished through legislation signed into law on 6 January 2017.⁵⁰

DISBURSEMENT POLICY

44. Federal funding is disbursed to centers on a semi-annual or other negotiated schedule conditional upon the center demonstrating that it met cost-share requirements.

REPORTING REQUIREMENTS AND FINANCIAL CONTROLS

45. The recipients of cooperative agreement award are required to provide client data on a quarterly basis in a specified format and submit semi-annual technical and financial reports. Client data is used, in part, to identify establishments for post-project surveys conducted by NIST MEP.
46. NIST staff performs annual reviews of the MEP Centers. In addition, an independent peer review is conducted during the third year of operations and every two years thereafter.
47. The Office of the Inspector General (OIG) in the U.S. Department of Commerce conducted audits of six centers – California, Florida, Massachusetts, Ohio, South Carolina, and Texas. In each of the six cases, the OIG recommended that certain costs be disallowed and steps be taken to recover excess federal funding. Excess federal funding totaled more than US\$11 million. One of the centers subsequently closed.

45 United States Government Accountability Office (2011).

46 In this regard, the GAO report cited an earlier study, Stone & Associates and the Center for Regional Economic Competitiveness, “Re-examining the Manufacturing Partnership Business Model,” Washington, DC, October 2010.

47 US GAO (2011), op. cit.

48 Report on the Appropriations Bill, 2012 (July 20, 2011).

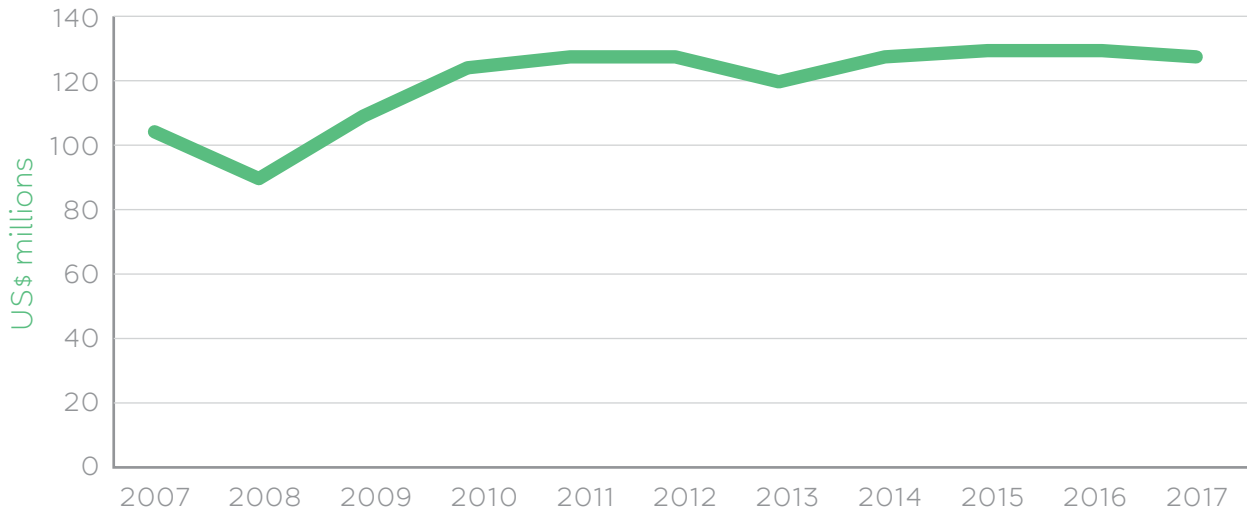
49 Transmittal letter from Vice Chair, NIST MEP Advisory Board and Chair, NIST MEP Advisory Board Subcommittee on Cost Share to the Director, National Institute of Standards and Technology (dated 18 October 2013).

50 American Innovation and Competitiveness Act of 2017 (P.L. 114-329).

BUDGET

48. The MEP program is funded through annual Congressional appropriations, which have remained fairly stable since the end of the recession as shown in Figure A1.

Figure A1. Annual Congressional Appropriation



49. According to a GAO report issued in 2014, NIST spent \$608.3 million in federal funding on the MEP program in fiscal years 2009 through 2013, and used most of these funds to directly support MEP centers and their work with manufacturing firms.⁵¹ Specifically, NIST disbursed \$494.6 million to MEP centers in the form of cooperative agreement awards (\$471 million) and competitive grant awards (\$23.6 million). NIST spent \$78 million for NIST staff and contractors, some of which NIST considers direct support and some administrative spending. The remaining \$35.7 million was spent for agency-wide overhead and other administrative spending. All told, NIST estimated that about 88.5 percent of federal MEP program spending in FY2013 was for direct support of MEP centers, and the remaining 11.5 percent was administrative. The GAO could not determine whether the level of administrative spending was appropriate “because there is no standard definition of administrative spending for federal programs.”⁵²

50. With respect to the MEP centers: Looking at 2016, MEP centers received roughly \$106 million from NIST, which accounted for 41.5 percent of their total income. A mix of cash and in-kind contributions from state government, local government, and other funders accounted for 29.4 percent of total revenue. The remaining 29.1 percent of income was generated through client fees and other program activities. It should be noted that some clients drew on training and other types of grants from state governments to cover client fees paid to the MEP centers; however,

the magnitude of these additional public subsidies is unknown.

Table A4. MEP Centers’ Sources of Income (FY2016)

Source	Amount (US\$ million)	Percentage
Funding under NIST MEP cooperative agreements	102.3	40.0%
Funding under NIST MEP competitive grants	4.0	1.6%
Sub-total NIST MEP	106.3	41.5%
State/Local Government Cash Contributions	45.6	17.8%
Applicant and Other Cash Contributions	22.4	8.8%
In-kind contributions	7.1	2.8%
Total cash and in-kind contributions	75.1	29.40%
Client fees and other program income	74.5	29.1%
Total All Sources	255.9	100.0%

51. Aggregate data on expenses of MEP centers are unavailable. As such, it is not possible to determine how much of the roughly US\$260 million that flowed into MEP centers in 2016 was allocated to service delivery to manufacturing establishments.

51 US GAO (2014).

52 Ibid.

52. MMTC provides an example of the finances of a manufacturing extension center. As shown Table A5, the organization exceeded the match requirements in 2016, with state funding and client fees accounting for 20.6 percent and 41.8 percent of total revenue, respectively. Not surprisingly for a service organization, payroll constitutes the largest share of expenses. All told, it is estimated that roughly 60 percent of total spending in 2016 was allocated to service delivery (including direct sales); the remaining 40 percent went toward program support, administration and overhead.⁵³

Table A5. MMTC Revenue and Expenses in 2016

	Amount (US\$ million)	Percentage
Revenue		
NIST MEP grant and project funding	\$4.6	37.7%
State grant and training funds	\$2.5	20.6%
Client fees and other program income	\$5.1	41.8%
Total revenue	\$12.1	100.0%
Expenses		
MMTC headquarters/regional office		
Salary and fringe benefits	\$5.5	47.9%
Project subcontractors	\$0.2	1.7%
Other expenses (rent, utilities, supplies, travel, etc.)	\$2.2	19.0%
Subtotal MMTC headquarters/regional office	\$7.9	68.6%
Regional affiliates		
Outreach and marketing expenses	\$1.6	14.1%
Internal project-related expenses (estimated)	\$0.8	6.9%
Project subcontractors (estimated)	\$1.2	10.4%
Subtotal regional affiliates	\$3.6	31.4%
Total expenses	\$11.6	100.0%
Addition to reserve	\$0.6	

Source: MMTC

53. ZZIn 2016, federal spending on the MEP program as a whole totaled roughly US\$14,000 per assisted manufacturing establishment. If contributions from state and local governments are included, this figure reaches almost US\$24,000. In comparison, clients paid an average of roughly US\$10,000 for services in the year.

⁵³ Correspondence.

⁵⁴ County Business Patterns.

SME PARTICIPATION

COVERAGE

54. According to publicly available information, MEP Centers had “interactions” with 25,445 manufacturers in FY2016. However, many of these interactions involved program outreach, short meetings, and other brief encounters. More detailed data show that centers had substantive engagements with 7,438 unique clients in 2016. As shown in Table A6, these clients engaged in a total of 12,137 projects, meaning that each client undertook an average of 1.6 projects. Each project took roughly 80 person-hours to complete. So the average client received just over 130 person-hours of assistance.
55. The breakdown in size of establishments is shown in Table A7. More than 95 percent of establishments had fewer than 500 employees; however, some are part of larger, multi-establishment companies.

PENETRATION RATE

56. There are roughly 297,000 manufacturing establishments in the United States; 99 percent of these have fewer than 500 employees.⁵⁴ As such, the penetration rate within the NIST MEP target population is on the order of two percent. However, as noted in Table A8, the penetration rate increases with the size of the establishment. For example, centers reached barely one percent of establishments with less than 20 employees, but provided services to almost 10 percent of establishments with 250-499 employees. Low penetration rates may be due to poor outreach efforts, the general reluctance of business owners to seek assistance, a mismatch between service offerings and needs, and/or the availability of comparable services at a similar cost. With respect to latter point, the extent to which public funding actually results in lower fees or transactional costs borne by clients is not known.

Table A6. Clients and Project Activity

	2012	2013	2014	2015	2016
No. of Clients	6,798	7,137	7,250	7,731	7,438
No. of Projects	10,482	11,293	12,018	12,961	12,137
No. of Project Hours	699,201	750,105	799,372	971,811	976,126
Avg. Projects/Client	1.5	1.6	1.7	1.7	1.6
Avg. Project Hours/Project	66.7	66.4	66.5	75.0	80.4
Avg. Project Hours/Client	102.9	105.1	110.3	125.7	131.2

Table A7. MEP Clients and Projects by Client Establishment Size

No. of Employees	% of Clients (n=7,438)	% of Projects (n=12,137)
Less than 20	29.6	26.6
20-49	24.1	23.1
50-99	17.9	18.3
100-249	17.7	18.9
250-499	6.8	7.9
500 or more	3.4	4.6
Sub-total	99.5	99.5
Missing	0.5	0.5
Total	100.0	100.0

Table A8. Penetration Rates of MEP Program

No. of Employees	No. of MEP Clients	No. of Manufacturing Establishments in US	Penetration Rate
Less than 20	2,203	208,703	1.1%
20-49	1,794	43,518	4.1%
50-99	1,330	21,118	6.3%
100-249	1,315	16,058	8.2%
250-499	504	5,096	9.9%
500 or more	206	2,728	7.6%
Total (a)	7,438	297,221	2.5%

Notes (a) Total number of clients includes 36 for which employment data are missing.

SKILLNETS (IRELAND)

OVERVIEW

57. Skillnets is a private, nonprofit company established in 1999 to develop and implement publicly supported training initiatives.⁵⁵ It was created as: “A direct response by the business community to the poor level of investment in training by Irish companies, particularly small companies...it has a dual purpose — to improve the current level, effectiveness and quality of training among those firms that already invest in training, and also to improve the incidence and level of training among firms where little training has taken place to date.”⁵⁶
58. Skillnets primarily serves as a facilitator and funding agency, providing resources on a cost-sharing basis to industry federations, business associations and other types of organizations to run “enterprise-led training networks” for companies that operate in the same sector or region and have similar training needs.⁵⁷ Training networks are expected to cover at least 50 percent of the cost of network operations through fees for service. For its share, Skillnets relies almost entirely on annual allocations from the National Training Fund made available through the Department of Education and Skills (DES).⁵⁸ While the focus of training networks lies on upgrading the skills of employees of participating enterprises, many networks also provide training to unemployed workers under a program separately funded by Skillnets – Job-seekers Support Programme (JSSP). Finally, Skillnets offers a training program specifically designed for owners/managers of small businesses – ManagementWorks – through a wholly owned subsidiary.

GOVERNANCE, MANAGEMENT AND STAFFING

59. The Memorandum of Association for Skillnets calls for a 13-person board, composed of seven business/employer representatives, three employee representatives, and three government representatives named by the Minister of Education and Skills. Currently, four members of the board are from the Irish Business & Employers’ Confederation (IBEC), which was instrumental in the founding of Skillnets and currently runs four training networks.⁵⁹ The board has established three standing committees: Finance and General Purpose Committee, Evaluation and Performance Monitoring Committee, and Audit Committee.
60. The board named a new Chief Executive in February 2016 and approved a reorganization of the company in line with the *Skillnets Statement of Strategy 2016-2019*. The current organizational chart is shown in Figure A2. The company has a staff of 24, including a five-person executive management team.

55 While Skillnets was established to implement a government initiative, it is not a statutory body. It was initially set up as a company limited by guarantee and subsequently reincorporated under the Companies Act of 2014.

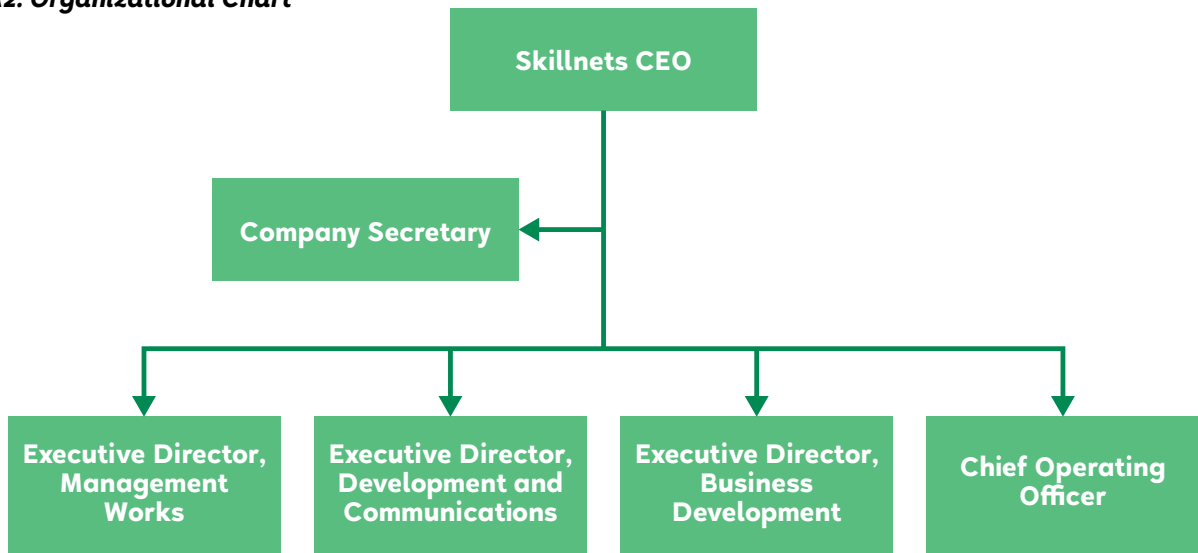
56 Skillnets, Final Report Training Networks Programme 1999 -2002.

57 Specifically it provides funding through two programs. i) Training Networks Programme (TNP), which cuts across a wide range of industry sectors and geographical regions; and ii) Finuas Networks Programme (Finuas), which supports specialised training in the international financial services (IFS) sector. Finuas was established in 2009.

58 “The National Training Fund (NTF) is resourced by a levy on employers of 0.7% of reckonable earnings in respect of employees in classes A and H employments, which represents approximately 75% of all insured employees. The levy is collected through the pay as you earn, PAYE, and pay related social insurance, PRSI, system and funds are transferred monthly to the Department of Education and Skills. Funding from the NTF is allocated by the head of DES, with the consent of the Minister for Public Expenditure and Reform, in accordance with the provisions of the National Training Fund Act 2000... The NTF levy generated €299 million in 2012, €317 million in 2013, €338 million in 2014, €364 million in 2015 and €390 million in 2016.” (www.kildarestreet.com/sendebates/?id=2017-04-13a.8)

59 IBEC was formed in 1993 through the merger of the Confederation of Irish Industry (founded 1932) and the Federated Union of Employers (founded 1942). It has more than 7500 members, which account for 70% of the total private sector workforce in Ireland. (<https://www.ibec.ie>)

Figure A2. Organizational Chart



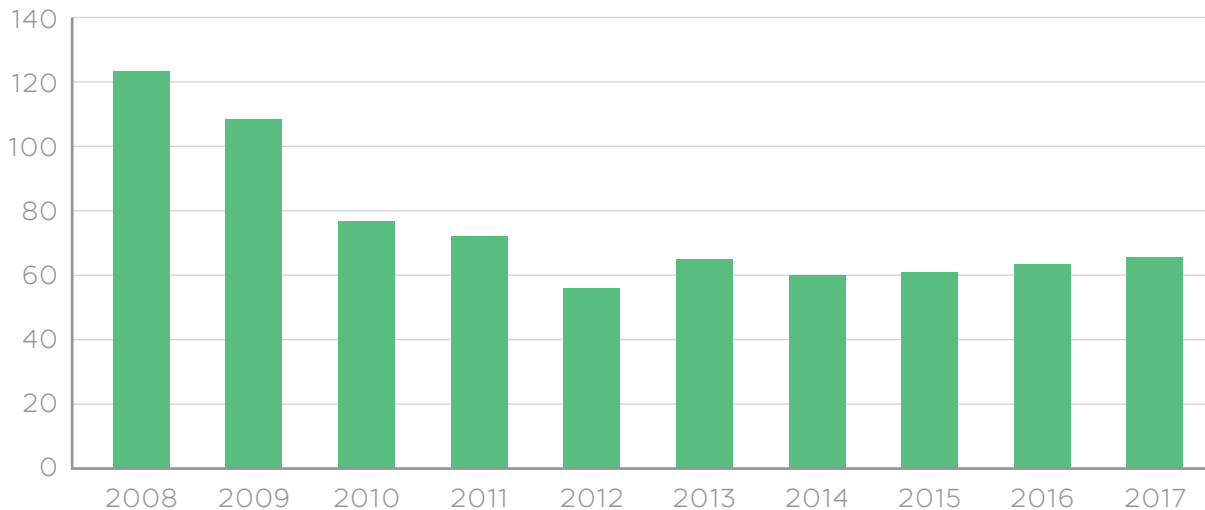
TRAINING NETWORKS

NUMBER OF NETWORKS

61. Skillnets has provided at least one year of funding to more than 400 networks since its establishment. The principal funding scheme – Training Networks Programme (TNP) – has been in operation since the organization’s inception. Training networks cut across a wide range of industry sectors and geographical regions. The other funding scheme for training networks – Finuas Networks Programme (Finuas) – was set up in 2009 and focuses on companies in the international financial services (IFS) sector.

62. The number of networks funded in a particular year has varied as shown in Table A9, with a marked decline following the 2008/09 recession. Explained Skillnets, “There was a very significant decline in the level of funding available to support training networks due to the recession in 2008 and 2009, both in terms of government funding support and co-investment from private enterprise. This saw the closure of some networks, particularly those that were exposed to more vulnerable sectors, and the merger of others that had become unsustainable on their own.”⁶⁰

Table A9. Number of Networks Supported by Skillnets



Source: Nexus Associates based on data from <http://www.skillnets.ie/skillnets-funding> and correspondence

63. The number of networks in each year masks a fair amount of churn in funded networks year-to-year. For example, as shown in Table A10, nine of the 60 networks that were funded in 2014 did not receive support in 2015. As explained by Skillnets, “Three

existing networks that applied for funding in 2015 were declined. These networks failed to achieve minimum scores against specified strategic and/or operational criteria. The remaining networks closed for a variety of reasons, including mergers of contracting

⁶⁰ Correspondence.

organisations, lack of member engagement, and most commonly, underperformance against contracted KPIs.”⁶¹ With 11 new networks established in 2015, the total number of networks that received funding in that year was 62. Over the three-year period, the attrition rate for networks was roughly 25 percent.

Table A10. Networks Turnover

	2015	2016	2017
Number of networks funded in previous year	60	62	63
Number of networks in previous year that ceased operations	9	3	4
Number of new networks established in year	11	4	6
Number of network funded in year	62	63	65

Source: Nexus Associates based on Skillnets’ data

64. That said, some training networks have continued to receive funding over an extended period. For example, as shown in Table A11, six networks (9 percent of the total) funded in 2016 received funding for the first time in that year. At the other end of the spectrum 38 networks (58 percent of the total) have been supported for 10 or more years.

Table A11. Funding History of Current Networks

	Number of Networks	% of Total	% Cumulative
1st year of funding	6	9%	9%
2nd year of funding	4	6%	15%
3rd year of funding	4	6%	21%
4th year of funding	0	0%	21%
5th year of funding	5	8%	29%
6th year of funding	0	0%	29%
7th year of funding	4	6%	35%
8th year of funding	2	3%	38%
9th year of funding	2	3%	41%
10 years or more	38	58%	100%
Total	65	100%	

Source: Correspondence with Skillnets

65. Skillnets enters into contracts with industry federations, business associations or other legally

61 Correspondence.
62 Correspondence.
63 Ibid.

64 This percentage should be treated with caution. Course offering vary by month and contracting organizations are currently not required to list all courses on the Skillnets website.

constituted organizations to run the networks. These contracting organizations receive funding from Skillnets, assess the training needs of companies in the sector/region, develop and implement training plans, and handle all required administrative tasks. Enterprises participating in networks can be any size, including sole traders.

66. The contracting organizations are responsible for establishing a steering group comprised of “member company representatives” to oversee the network, including the procurement of services. Contracting organizations are required to engage a person to manage the training network on a day-to-day basis. Network managers are typically employees of the contracted organisations; less than 20 percent of organizations retain a consultant to perform this function.⁶² Most contacting organizations also engage at least one person to handle administration associated with network operations. Per the policy established by Skillnets, management expenses can be no more than 25 percent of the total network budget.

67. Contracting organizations develop training plans with the input of companies in the sector/region. As long as they are consistent with the overall mission of Skillnets, contracting organizations have wide latitude to determine the specific set of courses that will be offered during the year. In practice, courses offered under the auspices of networks cover a wide range of subjects gauged to different levels of skill qualification and vary from one-hour seminars to two-year, part-time degree programs. Courses are oriented toward competencies required for different occupations from line workers to programmers, sales personnel, supervisors and general managers. Examples of “high-value” training courses/programs designed for specific industries are shown in Table A12; many of these were developed from scratch using development funding available through the Skillnets.⁶³ In addition, many courses offered by networks, particularly those that have a regional orientation, deal with more generic skills that have applicability across sectors. In this regard, a review of courses scheduled to start in September 2017 shows that almost ten percent are directed toward Microsoft Excel or Outlook.⁶⁴ As explained, “Skillnets are required under mandate to provide support to all skill levels in the workforce...Our goal is to achieve a better balance between strategic and transactional training across all networks. This is particularly the case with networks where there is clearly an over-emphasis on relatively low-impact courses of short duration, e.g., high volumes of Excel Level 1 training. ...[This type of training] remains important to networks and their member companies,

it is often the first point of engagement, but it should only be one part of a mix of learning and development

interventions available to member companies through their membership in a network.”⁶⁵

Table A12. Example of Sector-Specific Training

Course Title	Skillnet	Description	Duration
Validation Principles and Practices for the Medical Technology Industry	Irish Medtech Association Skillnet	The course will enable personnel in the medical technology industry to understand all current device and diagnostic validation regulations and to develop the skills necessary to address and prepare for the scope of validation requirements in industry.	12 weeks – 3 days of classroom training over three weeks followed by 9 weeks on-line. On-line classes involve 2 hours lecture plus 5 hours (approximate) of research, reading and assignments.
Cobotics Technology Deployment	Innovation and Lean Sigma Skillnet	The course will prepare the learner to identify suitable cobotics projects in their own organization.	Five days
Digital for Radio programme	Learning Waves Skillnet	The programme aims to meet the needs of those working in this area across the Independent Commercial Radio Sector. Those participating in the programme will be required to undertake a number of core modules and then depending on the area they work in, they can specialise in either sales or content creation modules.	One day per week for ten weeks
General Certificate in Distilling (GCD)	Taste 4 Success Skillnet	The course covers basic knowledge of the processes used to produce the main types of potable spirit consumed worldwide.	Five days
Traineeship Programme for Animation and VFX	Animation Skillnet	Full-time programme at host studios. Includes courses in Nuke, Maya, ZBrush, Toon Boom Harmony, storyboarding, professional practice, and visual storytelling.	6-months – Short period of classroom training, followed by a mixture of on-the-job and classroom training.
MSc in Applied Data Science and Analytics	Technology Ireland ICT Skillnet	Part-time programme delivered entirely online. The course will focus on the knowledge and skills to select, apply and evaluate data science and big data analytics techniques to discover knowledge that can add value to a company. Offers an MSc in Applied Data Science and Analytics.	Two years, part-time. All lectures are delivered live online, two-evenings per week.
Certificate in Polymer Technologies	First Polymer Skillnet	Part-time program offered primarily online. Program covers the following subjects: mathematics, CIM & automation technology, plastics materials and processing, and plastics material selection. Offers a level 6 Certificate in Polymer Technology (Special Purpose Award).	One year, part-time. Online lectures are generally delivered 2-3 evenings per week. Also requires attendance on six days during the year.

68. All training courses offered by networks are delivered by external training providers retained by contracting organizations through a competitive tendering process per procurement guidelines issued by Skillnets.

69. Some, but not all, networks advertise different fees for members and non-members for courses offered under the auspices of Skillnets-funded networks; quoted prices for members are typically 20 to 25 percent lower than for non-members. According to Skillnets, while this may, in some instances, reflect discounts

offered to members of contracting organizations that charge membership fees, some “networks list a members versus non-members price simply to illustrate the price difference between the market rate for a course and the subsidized rate; in practice any company that participates will be able to avail of the lower rate.”⁶⁶ In this regard, it should be noted that many networks do not charge membership fees and do not seem to have a formal membership application process; all companies that participate in training courses are counted as members.

65 Correspondence.

66 Correspondence.

MANAGEMENTWORKS

70. The Management Development Council report 2010 identified the need to enhance the level of management capability of small and medium-sized firms.⁶⁷ As a result of the research, ManagementWorks was established in 2012 under the Government's Action Plan for Jobs with a remit to support small to medium enterprises in sustaining and creating jobs.
71. Rather than work through intermediaries, Skillnets contracts directly with training providers to deliver agreed training courses; course fees flow to Skillnets and are used to offset the cost of training delivery. There are currently five training courses offered through ManagementWorks as shown in Table A13.⁶⁸ According to Skillnets, "While TNP networks address the full spectrum of training needs, ManagementWorks focuses exclusively on management development. The programmes are targeted not only at SMEs that are already engaged with TNP networks, but also at the "hard to reach" enterprises, i.e., those that traditionally don't engage with business networks and have a poor track record of investment in learning and development."⁶⁹
72. The fees charged to companies for the Management courses are set by Skillnets. The fee structure takes into account a number of factors, including (a) the market rate for similar programs, (b) the cost to Skillnets of procuring the programs, and (c) the level of funding available to Skillnets to subsidize the courses.⁶⁹ Fees account for roughly 50 percent of the total cost of the ManagementWorks program.
73. According to Skillnets, the fees charged for the Management Team and Lean Business courses are in line with the similar training programs available through Enterprise Ireland and the IDA.⁷⁰ The fee charged to Skillnets' clients for the IMI Management Diploma course is roughly one-third of the rate for SMEs advertised on the IMI website.⁷¹ Subsidies for the IMI course are not available through any other agency.

67 <https://www.djei.ie/en/Publications/Publication-files/Forf%C3%A1s/Management-Development-in-Ireland.pdf>.

68 Additional detail is provided in A.

69 Correspondence.

70 Ibid.

71 <http://www.imi.ie/imi-diplomas/diploma-in-management>. Founded in 1952, the Irish Management Institute (IMI) is a not-for-profit membership organisation dedicated to improving the standard of management practice in Ireland. The organization merged with the University College Cork (UCC) in 2016.

Table A13. ManagementWorks Training Courses

Title	Objective	Description
Business Growth €1,800 per participant	The Business Growth programme gives you the skills to create and implement the daily, weekly and monthly systems and practices that are key to growth. You will learn skills in financial planning, time management, sales, marketing, teamwork, customer service and leadership to match your management capability with your technical expertise. More importantly, you will start taking action immediately to make improvements in how you do business.	<ul style="list-style-type: none"> • Delivered over six months • Company diagnostic – a three-hour one-to-one session with your coach • Six highly practical one-day workshops with other business owners and managers • Six hour-long follow-on coaching sessions focused on delivering results for your business
Business Leadership €1,988 per participant	The Business Leadership programme gives you the skills to: Build an action plan for your business; Understand your leadership style and use it to get the best from your team; Set key performance indicators (KPIs) and manage your team's performance; Prepare for change with the minimum of disruption; Manage challenges in the future through planning.	<ul style="list-style-type: none"> • Delivered over six months • Company diagnostic – a three-hour one-to-one session with your coach • Six highly practical half-day workshops with other business owners and managers • 15 hours of follow-on coaching focused on delivering results for your business
Lean Business €3,500 per company for up to three participants	The Lean Business Programme will help you and your team members to: Develop a clear understanding and practical knowledge of the tools and practices underpinning lean Identify and deliver a project or suite of projects that will provide meaningful and measureable improvements for your business; Gain the knowledge, skills and confidence to be able to apply lean principles, tools and techniques to other projects within your business.	<ul style="list-style-type: none"> • Delivered over three months • Five practical one-day group workshops attended by all participating companies • Eight half-day mentored sessions in your place of work • The opportunity to share and learn from the collective experience from all participating companies • The completion of a valuable project by each participant • Access to lean practitioners and trainers
Management Team €3,500 per company	The Management Team Programme will help you: Develop a relevant mission, a meaningful vision and values that truly reflect the world view of your leadership team; Create a visual map of where you want to go; Create a visual strategy showing how to get there; and Use visual management tools to make it happen.	<ul style="list-style-type: none"> • Delivered over three months • Two full days and four half days • FutureSME diagnostic – a detailed assessment of your business capability. At the end of the programme we review the diagnostic to evaluate how the organisation has improved because of the Management Team programme • A visual strategy founded on a clear and exciting mission, vision and values
Postgraduate IMI Diploma in Management €3,000 per participant	The postgraduate Irish Management Institute (IMI) Diploma in Management is a nationally accredited and internationally recognised postgraduate programme at Level 9 of the National Framework of Qualifications. Successful participants will be awarded the IMI Diploma in Management and a Postgraduate Certificate from University College Cork. By completing the IMI Diploma in Management you will: Gain a management qualification that changes the way you work day-to-day; Dispel any fears you might have about hard or soft skills such as finance or team building; Learn the skills to manage with fewer resources; Gain the ability to take a panoramic view across all the areas of your business and to make effective decisions on an holistic basis; and Develop and apply a comprehensive toolkit of best-practice management techniques.	<ul style="list-style-type: none"> • An 18-day programme delivered over six months • The diploma is delivered using a mix of classroom teaching, action learning, class discussion, case study analysis, and individual and group activities. • Six modules: Business Strategy, Financial Management, Sales and Marketing, Advanced Communication Skills, Human Resource Management, and Organisational Behaviour

KEY POLICIES AND PROCEDURES

APPLICATION PROCESS

74. Skillnets issues two open calls for proposals each year to attract applications for new training network plus a separate call for proposals from existing networks for continued funding. The application process is competitive with no guarantee of funding.
75. The open call for new networks in 2016 states, “Any group of private enterprises or any enterprise-led association can form a training network provided that they have a strategic and long-term common interest

to pursue in the development of human resources. The network must be led by a contracting organization.” The contracting organization must be a legal entity and have been in existence of at least one year. As noted by Skillnets, “The requirement for contracting organisations to have been operating for at least one year prior to applying for Skillnets funding was introduced as a risk management measure. It allows for the review of a full set of audited accounts, which supports an assessment by Skillnets of the financial standing of a contracting organization. This provides some level of assurance that an organization in receipt of funding support has the capacity to repay funding support should the need arise, e.g., through

underperformance against contracted KPIs.”⁷²

76. Applicants are required to submit, *inter alia*, a summary of the training need assessment and a proposed network plan and budget. Applications are assessed against specified strategic and operational criteria. A subcommittee of the board oversees the assessment process. Final funding decisions are subject to approval by the full board.

CONTRACTS

77. Skillnets enters into contracts (“funding agreements”) with organizations responsible for running training networks. The agreement incorporates the agreed network plan, budget and payment schedule along with general conditions dealing with the roles and responsibilities of the parties, network contracts, network finances, intellectual property, insurance and indemnities, information and publicity, meetings and events, statutory requirements, eligible and ineligible costs, and financial reporting.

COST-SHARING POLICY

78. Under the policy adopted in 2010, Skillnets funding for training networks is intended to cover no more than half of the total cost of network activities during the course of the year, including the cost of network management and administration, applicable overhead, and direct training costs (“programme costs”). The contracting organization is required to generate matching funds through membership dues, course fees and/or sponsorship. All matching funds must be in the form of cash. The 50 percent cost-sharing policy was established in 2008/2009 and “reflects the budgetary challenges of the time.” Skillnets has raised the possibility with the government of lowering networks’ cost share below 50 percent.⁷³
79. Fees for training unemployed workers under the JSSP are fully covered by Skillnets.

FUND DISBURSEMENT

80. Skillnets disburses funds to contracting organizations in installments: 20 percent upon execution of agreement, 40 percent upon expending 80 percent of first installment, 30 percent upon expending 80 percent of second installment, and the remaining 10 percent upon completion of activities and submission of independent account report. All payments are subject to satisfactory performance, demonstration of matching funds, and compliance with reporting requirements.

REPORTING AND FINANCIAL CONTROLS

81. Skillnets uses various systems to manage financial and non-financial risks under the following headings: procurement, finance, activity, governance, performance, and branding.
82. Skillnets staff conduct a daylong compliance visit to each funded network to review performance and discuss financial issues. During these visits, staff inspect various documents, including procurement documentation, invoices, steering group meeting minutes, and training activity documentation (trainee profiles, signed attendance sheets, and course evaluations).
83. In addition, each network is required to submit an Independent Accountants Report at the end of each finance period (normally the financial year ending 31st December) in order to request the final installment of their grant, known as a “retention payment”. The “end-of year closedown process” includes a review of this Independent Accountants Report and may lead to some income and expenditure being deemed ineligible. In such cases, the normal practice is for an adjustment to be made to the final retention payment.

BUDGET

84. Skillnets operates under an open-ended funding agreement with the Department of Education and Skills (DES) set in place in 2011. The agreement makes provision for funding Skillnets from the National Training Fund (NTF) within an annual budgetary process. As shown in Table A14, in 2016, funds from the NTF through DES constituted roughly 96 percent of total income; the remaining funds were generated through fees paid by companies for training under the ManagementWorks program. Approximately 86 percent of available funds were used to cover program costs in 2016 defined as, “...programme support and grant payments made to fund the operations of projects on behalf of the company for the formation and successful operation of enterprise-led networks including the ManagementWorks programme.” Administrative costs account for the remaining 14 percent of total expenses.

⁷² Correspondence.

⁷³ Skillnets (2017b). The organization is also looking to secure funding on a five-year cycle to provide greater certainty and allow it to “plan for an extension of [the networks’] reach both in terms of participating member firms and the complexity of needs which their offering might address.”

Table A14. Financial Performance (€ euros)

	2015	2016
Income		
Department of Education and Skills (NTF)	16,152,975	16,117,124
ManagementWorks (enterprise fees)	655,014	742,675
Total income	16,807,989	16,859,799
Expenses		
Programme costs	14,608,048	14,541,918
Administrative costs and taxes (a)	2,199,941	2,317,961
Total expenses	16,807,989	16,859,879

Notes: (a) Taxes accounted for just €96 and €40 in 2015 and 2016, respectively.

Source: 2016 Annual Report

Table A15. Funding for Training Networks (a)

Program	No. of Networks	Skillnets Grant Support (€)	Network Matching Funds (€)	Total Funding (€)	Average Funding per Network (€)
TNP	59	9.0m	10.8m	19.8m	340k
Finuas	3	0.8m	1.0m	1.8m	600k
ManagementWorks	NA	0.9m	0.7m	1.6m	NA
Total		10.7m	12.5m	23.2m	

Notes: (a) In addition, Skillnets committed €2.1 million for the JSSP program in 2016.

Source: Annual Report 2016

SME PARTICIPATION

COVERAGE

87. A total of 14,263 companies participated in training programs supported by Skillnets in 2016, primarily through networks funded under the TNP.⁷⁴ As shown in Table A16 all told, approximately 92 percent of participating companies were defined as SMEs (i.e., companies with less than 250 employees).

Table A16. Number and Size Distribution of Participating Companies by Program

	TNP	Finuas	ManagementWorks	Total (a)
Total number of companies	12,997	857	409	14,263
Size distribution (no. of emp.)				
Micro (0-9)	48%	62%	43%	49%
Small (10-49)	28%	21%	39%	28%
Medium (50-249)	16%	10%	16%	16%
Large (250+)	8%	7%	2%	8%
Total	100%	100%	100%	100%

Notes: (a) Figures assume that there is no overlap among programs.

Source: Nexus Associates based on data provided by Skillnets

74 2016 Annual Report.

75 The total number of participating companies is slightly overstated due to an overlap between companies that participated in TNP and ManagementWorks. Skillnets estimated that 40 firms participated in both programs. (Correspondence).

88. Skillnets Networks delivered 4,816 training courses during 2016; on average, each course attracted nine participants and lasted roughly five days. A total

of 44,458 employees from participating companies attended courses offered through the networks.⁷⁶

Table A17. Network Training Activities

Program	No. of Training Courses	Average Duration	% of Courses NFQ-Certified or other certification	No. of Participating Companies	No. of Employees Trained
TNP	4,612	5 days	40%	12,997	41,335
Finuas	162	9 days	56%	857	2,402
ManagementWorks	42	15 days	74%	409	721
Total	4,816	5 days	41%	14,263	44,458

Source: Annual Report 2016

89. As a rough approximation, Skillnets grants in 2016 averaged €750 per participating company or €240 per employee trained, not including other program support and administration.

PENETRATION RATE

90. There are roughly 250,000 enterprises operating in Ireland according to the Central Statistic Office - of which, 99.8% are defined as SMEs (<250 employees). Given the figures cited above, Skillnets supported

the delivery of training to roughly six percent of all enterprises in the country in 2016. While the figures should be treated with caution,⁷⁷ the penetration rates varied by program and firm size as shown in Table A18. Networks generally have a relatively higher level of participation from companies with more than 50 employees within their sectors and regions. The lowest level of participation (3 percent) is from micro-enterprises (<10 employees), which account for 92% of all enterprises operating in the country.

Table A18. Penetration Rate by Size of Enterprise

Size	No. of Skillnets Clients	No. of Irish Enterprises	Penetration Rate
Micro (0-9)	6,946	229,472	3%
Small (10-49)	3,979	16,002	25%
Medium (50-249)	2,231	2,829	79%
Large (250+)	1,108	540	(a) 205%
Total	14,263	248,843	6%

Notes: The calculated penetration rate is not possible and is probably due to differences in the definitions and data collection procedures used by the CSO and Skillnets.

91. Skillnets pointed to a number of factors affecting participation rates, including budgetary constraints, the lack of awareness among employers of the benefits of training, and the on-going challenge of developing a culture of lifelong learning in the country. With respect to ManagementWorks, Skillnets also pointed to competition from other organizations, noting, "... while some TNP networks make a small number of referrals to the ManagementWorks programmes, many networks provide their own management development programmes to their members."⁷⁸

⁷⁶ Skillnets networks also provided training to 5,915 "job-seekers" in 2016.

⁷⁷ The Central Statistic Office measures the population of active enterprises based on the Central Register of all businesses in Ireland. Employees are persons who are paid a fixed wage or salary. Employees are calculated using an annual employment return received from Revenue. This return contains all registered employers and the number of employees they have paid a wage or salary to for a reference year. Skillnets relies on data reported by networks, which is based on self-reported data from participating companies. In addition to potential problems with data reliability, companies that participate in multiple networks would be counted multiple times. This is likely to be more of an issue for large companies, i.e., those with 250 or more employees.

⁷⁸ Correspondence.

OVERVIEW

92. The history of the SPRING Singapore (Standards, Productivity and Innovation Board) dates back to the April 1996 with the establishment of the Singapore Productivity and Standards Board (PSB) through the merger of the National Productivity Board (NPB), the Singapore Institute of Standards and Industrial Research (SISIR), and the SME development function of the Economic Development Board (EDB). In April 2002, PSB was renamed SPRING Singapore. It is a statutory organization, operating as a corporate body, under the Ministry of Trade and Industry (MTI).
93. The statutory mandate is quite broad, reflecting the origins of the organization. SPRING Singapore is responsible for developing and promoting internationally-recognized standards and quality assurance systems, overseeing the safety of consumer goods, and promoting economic development. The latter includes supporting “the growth of small and medium enterprises and any other enterprise requiring its assistance.”⁷⁹
94. SPRING Singapore has established a number of financial assistance programs directed toward SMEs, including the Innovation Capability Voucher (ICV) scheme, which can be used by companies to cover the cost of pre-scoped consultancy services and ICT systems offered by qualified service providers in Singapore.

GOVERNANCE, MANAGEMENT AND STAFFING

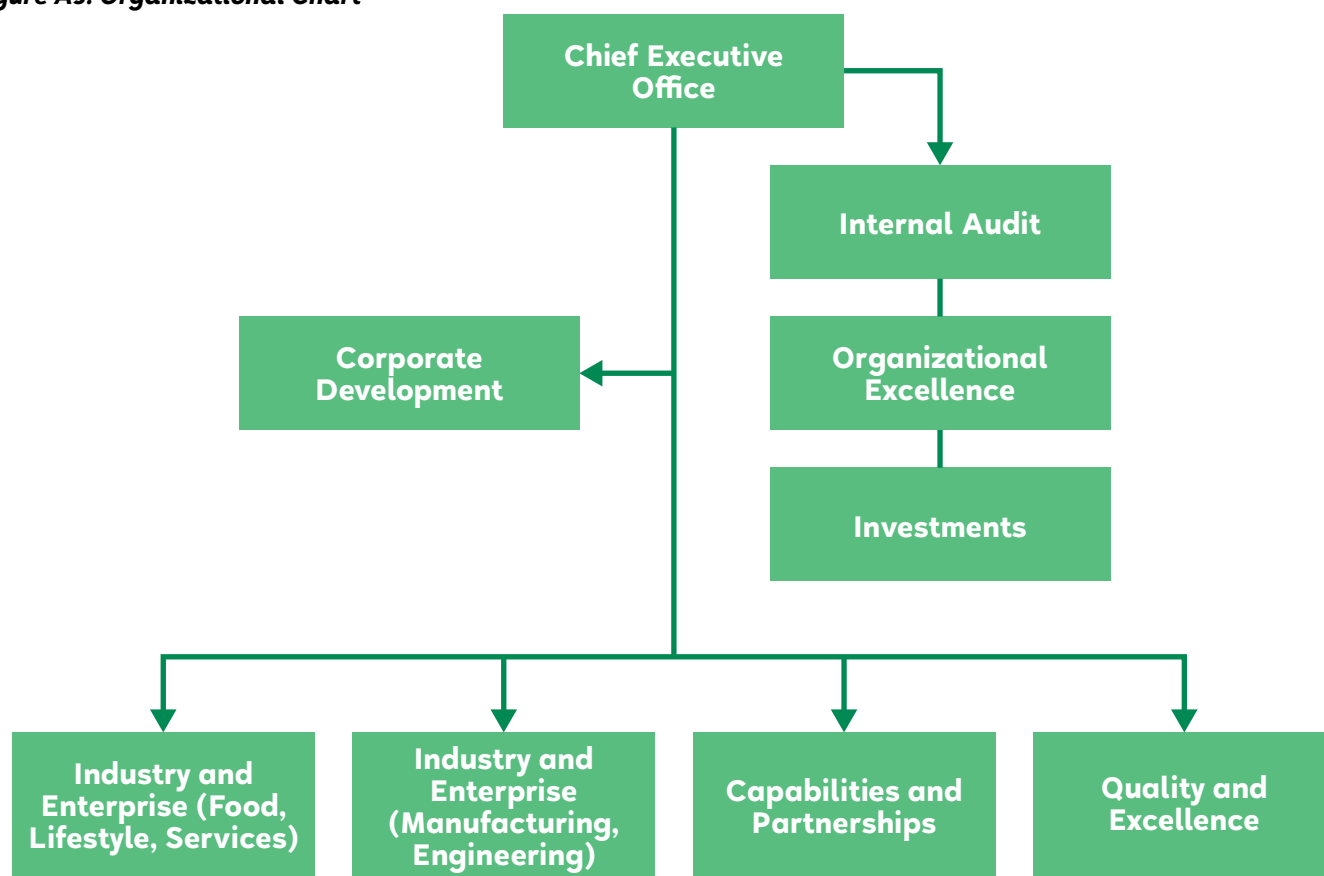
95. The legislation establishing SPRING Singapore calls for the establishment of a board of directors consisting of a Chairman, the chief executive; and between six and 16 other members “from such sectors or classes of persons as the Minister may consider appropriate, including the Government, employers, trade unions, businesses, professionals and the academic staff of the institutions of higher learning in Singapore.” As indicated on the SPRING Singapore website, the board currently consists of 14 members “from leading private sector companies as well as senior government officials.”⁸⁰ The government officials serving on the board include a representative of the Ministry of Defense, a representative of International Enterprise Singapore, and a representative of the Economic Development Board. There are no trade unions representatives currently on the board.
96. An organizational chart for SPRING Singapore is presented in Figure A3. The organization is headed by a 10-person executive management team, including a chief executive, deputy chief executive, three assistant chief executives, four group directors, and an executive director for human resources. Data on staffing levels are unavailable, however, the total annual payroll is on the order of S\$51 million.⁸¹

79 Standards, Productivity and Innovation Board Act (Chapter 303aA - Act 1 of 1996 as revised in 2002 and subsequently amended.

80 <https://www.spring.gov.sg/About-Us/BOD/Pages/corporate-governance-policy.aspx>

81 One Singapore dollar (S\$) = 0.742 US Dollars or 0.622 Euros

Figure A3. Organizational Chart



SCHEMES

97. As noted above, SPRING Singapore has various initiatives for SMEs, including the Innovation Capability Voucher (ICV).^{82,83} The value of the voucher is set currently at S\$5,000. SMEs can use the voucher to retain consultants for pre-scoped services in four areas: financial management, human resources, innovation, and productivity. As shown in Table A19, all told there are 16 “consultancy service modules” – each has a defined scope of work, including the minimum number of consultancy hours (15-40 depending on the module).⁸⁴ As of March 2014, vouchers can also be used to purchase pre-scoped information and communication technology (ICT) systems, which SPRING Singapore refers to as “Integrated Solutions.” According to SPRING Singapore, the reason for expanding the scope of the ICV scheme came from the conclusion that “SMEs may not necessarily require consultancy services to diagnose a problem or propose solutions,” and “the enhanced ICV would allow SMEs who want to implement solutions to meet their business challenges but face resource constraints, to

take their first step towards capability upgrading.”⁸⁵ There are currently 14 categories of ICT systems that are eligible for support: appointment scheduling and booking system; asset/personnel tracking and identification; clinic management system, customer relationship management system, enhanced point-of-sales (POS) system; e-procurement management system; fleet management system, HR e-scheduling, inventory management system; mobile ordering and payment system; queue management system, school management system; and wireless paging system.⁸⁶ Each of these categories includes specific products offered by between two and 36 vendors.⁸⁷

82 The ICV replaced an earlier program – the Innovation Voucher Scheme (IVS) – in June 2012.

83 SPRING Singapore offers financial assistance to companies under a variety of other programs, including the Capability Development Grant (CDG) scheme, which covers 70 percent of the cost of eligible projects up a maximum of S\$30,000. It provides equity investments in startups through SPRING SEEDS Capital (SSC), an investment arm of SPRING Singapore and partners with financial institutions to provide loans for working capital, equipment/factory financing, and trade financing.

84 Detailed scopes of each consultancy service module are available on SPRING Singapore website.

85 <https://mybusiness.singtel.com/techblog/faq-2014-updates-innovation-and-capability-voucher-icv-and-productivity-and-innovation>

86 Descriptions are provided in an Attachment.

87 ICV List of Integrated Solutions Providers downloaded from SPRING Singapore website.

Table A19. Pre-Scoped Consultancy Service Modules

Category	Sub-category	Deliverables	No. of Service Providers
Financial Management	Planning and Budgeting	<ul style="list-style-type: none"> Minimum of 30 consultancy hours, including at least 10 hours of face-to-face engagement Project Report 	16
	Cash Flow and Working Capital Management	<ul style="list-style-type: none"> Minimum of 30 consultancy hours, including at least 10 hours of face-to-face engagement Project Report 	16
	Financial Assessment and Planning for Growth	<ul style="list-style-type: none"> Minimum of 30 consultancy hours, including at least 10 hours of face-to-face engagement Project Report 	16
Human Resources	Recruitment and Selection	<ul style="list-style-type: none"> Minimum of 30 consultancy hours Project Report 	13
	Compensation and Benefits	<ul style="list-style-type: none"> Minimum of 30 consultancy hours Project Report 	12
	Performance Management	<ul style="list-style-type: none"> Minimum of 30 consultancy hours Project Report 	20
	Learning and Development	<ul style="list-style-type: none"> Minimum of 30 consultancy hours Project Report 	16
Innovation	IP Business Diagnostics (Phase A)	<ul style="list-style-type: none"> Minimum of 25 consultancy hours Project Report 	11
	IP Legal Diagnostics (Phase B)	<ul style="list-style-type: none"> Minimum of 15 consultancy hours Project Report 	10
	Technical Feasibility Studies	<ul style="list-style-type: none"> Project Report 	24
	Customer Insights	<ul style="list-style-type: none"> Minimum of 30 consultancy hours Project Report 	14
Productivity	Quality Management - ISO 9001	<ul style="list-style-type: none"> Minimum of 40 consultancy hours, including at least 20 hours of face-to-face engagement Project Report SAC-accredited ISO 9001 certificate Applicant's Quality Manual Stage 1 and 2 Audit Reports 	43
	Environmental Management - ISO 14001	<ul style="list-style-type: none"> Minimum of 40 consultancy hours, including at least 20 hours of face-to-face engagement Project Report Internationally recognized accredited ISO 14001 certificate Applicant's Quality Manual Stage 1 and 2 Audit Reports 	26
	Occupational Health and Safety Management - OHSAS 18001	<ul style="list-style-type: none"> Minimum of 40 consultancy hours, including at least 20 hours of face-to-face engagement Project Report Internationally recognized accredited OHSAS 18001 certificate Applicant's Quality Manual Stage 1 and 2 Audit Reports 	36
	Business Diagnosis	<ul style="list-style-type: none"> Minimum of 40 consultancy hours Project Report 	38
	Service Improvement	<ul style="list-style-type: none"> Minimum of 40 consultancy hours Project Report 	11

98. Each voucher may be redeemed for one of the consultancy service modules or integrated solutions from a roster of pre-qualified service providers selected by SPRING Singapore. Consultancy service providers are primarily private, for-profit consultancy firms, except in the case of technical feasibility studies, which tend to be polytechnic universities, colleges

and, and research institutes. Providers of integrated solutions are all private companies. Services providers that are interested in participating in the scheme are required to submit applications in response to periodic calls issued by SPRING Singapore. Effective 1 January 2017, management consultants are required to be certified in order to participate in the ICV (and

CDG) program. In this regard, SPRING Singapore has appointed three certification bodies to develop and run certification programs for management consultants that are aligned with a specific standard – TR 43:2015. The standard sets out the “minimum acceptable professional standards and practices of individual management consultants. It defines the consultancy process, specifies the competency and ethical requirements of a professional consultant and outlines the scope for continuous professional development of consultants.”⁸⁸ Certification does not address domain expertise.

99. Each SME is entitled to a maximum of eight vouchers, two of which can be used for the purchase of Integrated Solutions. Each ICV project cannot exceed six months and must be completed before the submission of a new application. (Multiple SMEs cannot pool vouchers under a single project.)

KEY POLICIES AND PROCEDURES

APPLICATION PROCESS

100. Outreach for the ICV and other financial assistance scheme is done primarily through 12 SME Centers established by SPRING Singapore. Six of these centers are operated by SPRING Singapore; trade associations and chambers of commerce manage the others under agreements with SPRING Singapore.
101. All local SMEs can apply for ICV if they meet the following criteria: registered and operating in Singapore; have a minimum of 30% local shareholding; and have group annual turnover of not more than \$100 million or group employment of not more than 200 employees.
102. The application process is simple. Companies are asked to review the list of eligible projects and contact one of the participating service providers. The service provider must agree to undertake the project before the company submits an application. The two-page application form must be submitted via the ICV Online Portal.⁸⁹ Applications are processed within six weeks upon submission of all required documentations and successful applicants are notified by email.⁹⁰

COST-SHARING POLICY

103. The value of the voucher is fixed and associated with a specific scope of work. There is no cost-sharing requirement.

FUND DISBURSEMENT

104. SMEs must complete projects and submit claims within six months from the application approval date. For consultancy projects, SPRING Singapore makes the payment directly to the service provider. For the integrated solutions, payment is made to the company.
105. Companies are responsible for paying the applicable Goods and Service Tax (GST) from their own funds; it is not covered by SPRING Singapore.

BUDGET

106. As shown in Table A20, SPRING Singapore took in a total of S\$98.9 million in 2015, primarily in the form of government grants for the organization’s operating budget. It spent S\$99.2 million, including S\$98.8 million in operating expenditures, which consisted of staff costs (S\$51.0 million), operating expenses (S\$45.3 million), and depreciation and amortization (S\$2.5 million). Financial statements provided in the SPRING Singapore annual reports only deal with the organization’s operating budget; they do not include information on vouchers, grants or other forms of financial incentives provided to companies. The government provides funding for financial incentives to SPRING Singapore through a separate capital budget, which are referred to as “development expenditures” or “other development fund outlays.” Funding provided to SPRING Singapore through the capital budget is quite substantial – for example, the government earmarked S\$360 million for SPRING Singapore in 2015 above and beyond the S\$91 million provided for the organization’s operating budget.⁹¹

88 Factsheet on Technical Reference for Management Consultants (TR 43:2015) downloaded from <https://www.spring.gov.sg>.

89 Companies must have a government-issued CorpPass – a corporate digital ID – to access the ICV Online Portal. CorpPass is used by more than 130 government digital services managed by about 50 Government agencies. In order to obtain a CorpPass, companies must be legally registered and have a unique entity number (UEN) issued by the Accounting and Corporate Regulatory Authority (ACRA) or other UEN-issuance agency. *<http://www.ifaq.gov.sg/CorpPass>

90 <https://www.spring.gov.sg/Growing-Business/Voucher/Pages/innovation-capability-voucher.aspx>

91 The bulk of this funding is allocated to SPRING Singapore through grants from the Government’s Enterprise Development Fund (EDF).

Table A20. SPRING Singapore Operating Budget (S\$ millions)

	2015	2014
Income		
Government grant	91.4	82.2
Operating income	7.5	7.0
Total income	98.9	89.2
Expenditures		
Operating expenditure	(98.8)	(90.5)
Other expense, net	(0.4)	(0.1)
Total expenditures	99.2	90.6
Deficit	(0.3)	(1.4)

Source: Nexus Associates based on data in 2015/2016 Annual Report

107. Public reports indicate that the ICV scheme was launched in July 2012 with a four-year budget of S\$32 million. An additional S\$10 million was subsequently provided for the scheme, bringing the total budget to S\$42 million.⁹² However, given data on participation in the scheme provided in annual reports (see below), assuming that each participating company received one voucher, the total number of vouchers awarded in the three year period (2013-2015) would have been roughly 30,300 with a combined value of S\$151.5 million. (We were unable to verify figures with SPRING Singapore.)

SME PARTICIPATION

COVERAGE

108. In 2013, SPRING Singapore provided 1,767 vouchers to SMEs.⁹³ Roughly 39 percent of the vouchers were used for consultancy services related to productivity, 36 percent to innovation, 14 percent to financial management, and the remaining 11 percent to financial management. No data are available on the number of companies that used vouchers in that year.

109. SPRING reported that over 9,000 SMEs received vouchers in 2014, but did not indicate the number of vouchers or for what they were used in that year.⁹⁴ The number of SMEs using the ICV scheme increased to 19,500 in 2015,⁹⁵ again, no further data are provided in the annual report.⁹⁶ Year-over-year growth corresponds to the expansion of the ICV scheme to include funding for “integrated solutions.”

PENETRATION RATE

110. According to the latest government statistics, there are 216,900 enterprises in Singapore – 99% of which are SMEs, defined as enterprises with up to 200 employees or operating receipts of up to \$100 million.⁹⁷ This suggests that less than 10 percent of existing SMEs participated in the ICV scheme in 2015.

92 <http://www.gateway-law.com/newsletter/Innovation%20Capability%20Voucher.pdf>

93 Spring, 2013/2014 Annual Report

94 Spring, 2014/2015 Annual Report.

95 By way of comparison, 1,300 enterprises received grants under the CDG scheme in 2015.

96 Spring, 2015/2016 Annual Report. This annual report provides different figures for 2014 than those reported in the 2014/2015 Annual Report. It indicates that 7000 vouchers were provided in 2014, rather than over 9000. The reason for the revision is not explained.

97 <http://www.singstat.gov.sg/statistics/visualising-data/infographics/economy>

Attachment - Integrated Solutions

Product	Description
Appointment Scheduling and Booking System	The system allows the customers to book and change appointments. The system will send customised notifications to the staff and the customers of confirmations, reminders and pending appointments. The system should have an API to integrate with any existing Customer Relationship Management systems.
Asset / Personnel Tracking and Identification System	The system provides a combination of hardware (i.e. RFID tags, biometric scanners) and software so as to enable real-time identification and tracking of asset or personnel. This system is useful for companies, which need to track workers or assets that are on the move. The system should have an API to integrate with any existing HR Management Systems to enable the calculation of the employees' payroll.
Clinic Management System	The system automates day-to-day administration and management of tasks in medical offices. It streamlines clinic management processes such as in-patient record management, appointment bookings, medical billing and payment, as well as drug inventory management. The system may have an API that integrates with the Ministry of Health's (MOH) system, as well as the clinic's existing accounting management system. The integration with MOH's system allows patients who are eligible for Pioneer Generation and/or Community Health Assist Scheme benefits to claim their subsidies at the clinic.
Customer Relationship Management System	The system manages a company's interactions with current and potential customers, and provides a centralised record of all client details and contact history. It provides customer support, case management, knowledge base and membership management (for companies with membership system). The system should provide dashboard/reports to allow sales teams to view, analyse and manage sales activities, objectives, leads generated, leads follow-up efficiently. The system needs to have an API that integrates with the company's accounting software and email systems.
Document Management and Mobile Access System	The system synchronises digital documents across multiple sites for sharing among company employees. Local data is backed up and stored in the storage system, enabling disaster recovery, archiving, and rapid access as needed. Additionally, data access is optimised for each remote site with a central point of management. The system enables scanning, storage, retrieval, sharing, tracking, revision and distribution of documents. It reduces the need for manual handling of documents. For cloud- based solutions, data is encrypted end-to-end.
Enhanced Point-of-Sales (POS) System	The system automates sales transactions and generates sales report and provides insights on customer behaviour and product popularity. The system must include features that improve the company's business processes beyond the standard POS functions. Examples include: customer relationship management system; inventory management system; mobile ordering and payment system; restaurant table layout and split billing system; queue management system; or wireless paging system.
E-Procurement Management System	This is an all-in-one procurement system that automates procurement processes for Business-to-Business buyers and suppliers. The system enables seamless electronic execution of supply delivery, ordering, goods receipt and invoice generation. The system needs to have an API that integrates with any existing accounting and inventory management system.
Fleet Management System	The system includes telematics and GPS tracking technology, which provides the company a complete overview of its fleet's real-time location, and operating condition. The system will allow companies to tailor the fleet journey, manage cost control, improve fleet utilization and improve productivity.
HR E-Scheduling	The system automates worker roster scheduling and generates attendance and overtime reports, enabling companies to eliminate manual processes and effectively allocate manpower resources. The system's API should integrate with the company's existing HR management system, which manages employee record and payroll.
Inventory Management System	The system automates inventory management processes, monitors stock availability and streamlines tracking of transaction data. The system generates inventory reports and sends notifications on stock movements and status. The system's API should allow integrate with any existing accounting management and POS system.
Mobile Ordering and Payment System	The system streamlines customer ordering and payment processes in the F&B industry. The system facilitates the ordering of products through the use of a mobile device. Customer billing and payment system is an integral part of the solution. The system's API should integrate with any existing POS system and accounting system.
Queue Management System	The system allows the customers to leave the store while waiting for service, thereby eliminating physical queues in the shop premises. The system is able to send SMS notifications to inform customers of their queue number, estimated waiting time and when their waiting time is over. It generates reports that track the efficiency of queue management.
School Management System	The system manages data and key resources within schools and education institutions, such as parent/student contact details, class schedules and time-tables. It should also automate other operational processes, such as attendance and/or temperature taking.
Wireless Paging System	The system enhances customer service by allowing customers to alert service staff through an electronic paging system when service is needed. It is mainly catered for F&B companies such as restaurants, cafes and take-away stores.

SPRING Singapore. Updated as of 1 April 2016

HUMAN RESOURCE DEVELOPMENT FUND (MALAYSIA)

OVERVIEW

111. The Pembangunan Sumber Manusia Berhad (Human Resource Development Fund) Act, 1992 provided for the imposition and collection of a levy whose proceeds would be deposited in a fund for the purpose of promoting the training and development of workers. Responsibility for managing the fund was assigned to the Human Resource Development Council operating under aegis of the Ministry of Human Resources. The 1992 Act was subsequently repealed and replaced with the Pembangunan Sumber Manusia Berhad Act 2001 (Act No. 612 of 2001).⁹⁸ The Act created a new corporation, registered under the Companies Act 1965 as a private company, to serve as trustee of the fund. Authority for policy decisions was vested in the Board and responsibility for day-to-day management was granted to a Chief Executive. The change in governance, along with the ability to hire staff outside of government, was seen as a means to allow greater flexibility and responsiveness to changes in industry and the broader economy.
112. Employers that have registered and paid the levy are eligible for financial assistance under various schemes. In most instances, companies draw down on their own levy balance to pay for training; there is no government subsidy. HRDF does, however, underwrite the cost of some training with funding financed through transfers from the Employers' Fund, retained earnings and/or government grants. Some, but not all, subsidies are directed toward SMEs.

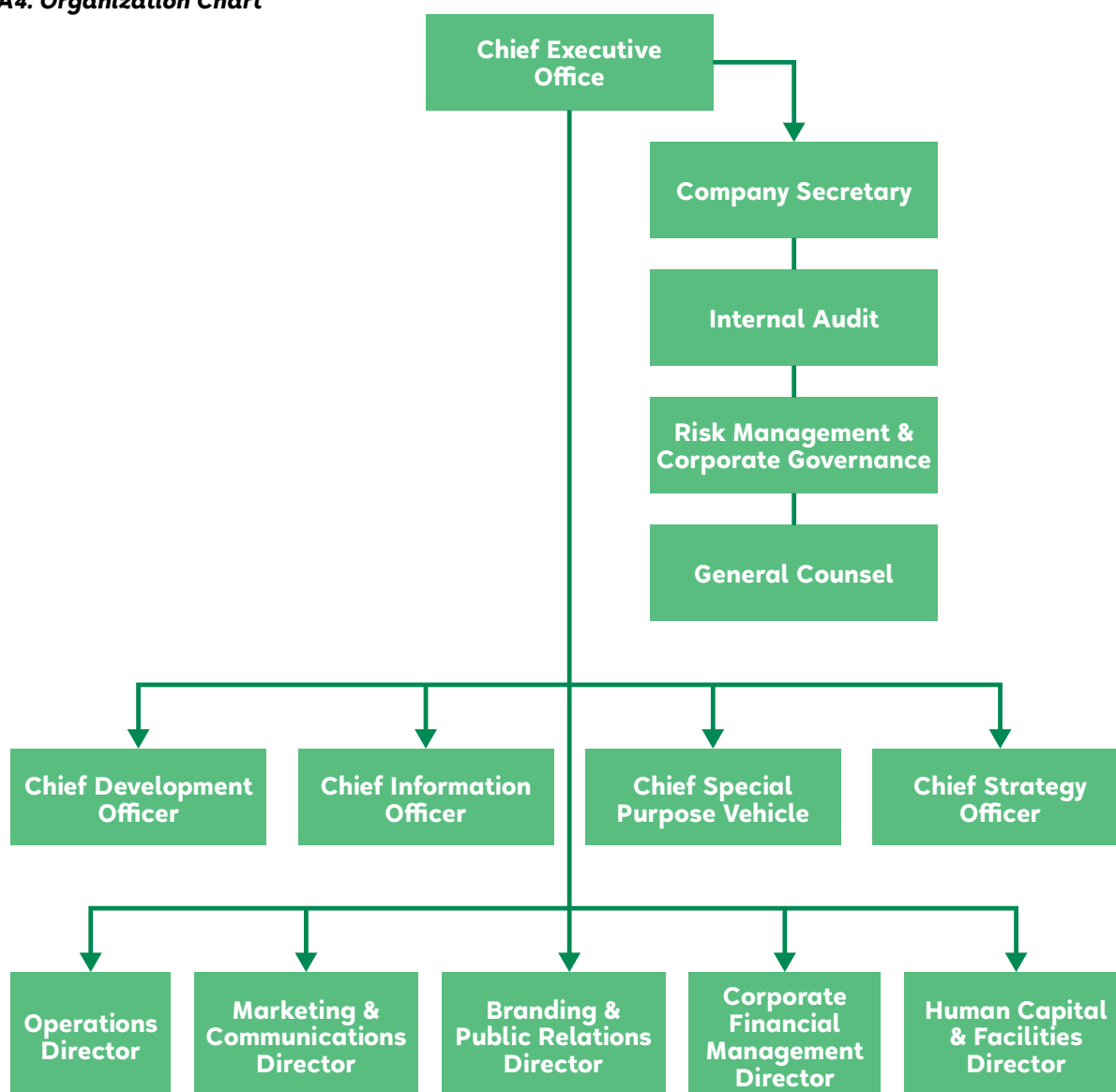
GOVERNANCE, MANAGEMENT AND STAFFING

113. The corporation is governed by a Board of Directors appointed by the Minister of Human Resources. As stipulated in the legislation, the board must include a representative of the Ministry of Human Resources; a representative of the Ministry of Finance; three persons representing other key government agencies;⁹⁹ ten persons representing employer organization; and the chief executive officer of the corporation. The minister may name two more people to the board at his/her discretion. While HRDF has had representatives from the labor organizations in the past, the current board does not. The board has established a number of committees, including Investment Panel, Finance Committee, Audit Committee, Establishment and Benefits Committee, Tender Committee (A&B), and Information Technology Committee
114. There have been a number of reorganizations over the years. The current organizational structure is shown in Figure A4. The corporation employs a total of 306 people. Further detail on the breakdown of staff by division/function is unavailable.

98 Human Resource Development Fund Act, 2001

99 This currently includes representatives of the Ministry of Higher Education, Economic Planning Unit; and Malaysia Productivity Corporation.

Figure A4. Organization Chart



115. The HRDF also serves as the training coordinating body for the National SME Development Council.¹⁰⁰ It established the National Human Resource Centre (NHRC) in August 2011 to support HR functions specifically within SMEs. The target population of NHRC is defined as “All SMEs in the country and not limited to employers registered with Pembangunan Sumber Manusia Berhad (PSMB)...”¹⁰¹ It provides information and advice via the web portal, call centers, and external consultancies. The latter includes assistance provided under the SME Training Needs Assessment consultancy scheme (see below).

HRDF LEVY AND FINANCIAL ASSISTANCE SCHEMES

HRDF LEVY

116. Every employer to whom the Act applies is required to register with the HRDF and pay a levy equal to one percent of monthly wages of employees to the fund.¹⁰² The payment of the levy is the responsibility of employers; under the law, employers are not permitted to deduct the payment from employee wages.¹⁰³ In turn, employers that have registered and paid the levy are eligible for financial assistance and other benefits.

117. When the original Act was implemented in 1992, it only covered employers in the manufacturing sector with 50 or more employees. Over time, coverage has

100 HRDF Annual Report, 2015.

101 <http://www.nhrc.com.my/about-us#.WYSVjK2ZPow>

102 Note: an employee is defined as “any citizen of Malaysia who is employed for wages under a contract of services, irrespective of whether they are permanent, part-time or on contract, but does not include any domestic servant.” HRDF General Guidelines.

103 This is not the same as tax incidence. As noted in the main body of the report, the tax burden is likely to fall on workers.

been expanded and now includes employers in 63 sub-sectors in manufacturing, services, and mining/quarrying, which have ten or more employees. Changes in coverage have been effected through government regulation, which only require the approval of the Minister of Human Resources.

118. Any employer covered by the law that is convicted for not registering with HRDF may be fined up to RM 10,000 and/or face imprisonment up to a year. The levy payment is supposed to be made no later than the 15th date of the month in which the payment falls due. Employers that fail to make the payment on time are subject to a fine of up to RM 20,000 and/or imprisonment for a term not exceeding two (2) years. It should be noted, however, that the power to enforce the law rests with government authorities; as a private company, HRDF cannot issue fines or bring charges in the event of noncompliance.
119. A total of 24,309 employers registered with HRDF between 1992 and 2016. This includes 6,774 employers that subsequently deregistered because they subsequently fell outside the ambit of the Act, closed, merged or were acquired. As such, a total of 17,535 active employers were registered with HRDF as of 31 December 2016.¹⁰⁴ In total, employers contributed RM 673 million to the fund in 2016. The breakdown by firm size is shown in Table A21.

Table A21. Registered Companies and Levies Collected in 2016

Number of Registered Companies	17,535
SME	14,207
Large	3,328
Levy Collection (RM thousands)	673,000
SME	410,000
Large	263,000
Average Levy Collection per Registered Company (RM)	~ 38,783
SME	~ 28,859
Large	~ 79,026

Source: Annual Report and Nexus Associates calculations

120. HRDF does not have reliable data on the number of employers that have 10 or more employees in the 63 sectors and are, therefore, obligated to register with HRDF.¹⁰⁵ As such the compliance rate cannot be determined. That said, it appears that the companies that employ the bulk of workers in the country are participating. According to an HRDF official, “Based on economic census data 2011 total workforce as compared to workforce that we have in our database, we have covered at least 92%.”¹⁰⁶

FINANCIAL ASSISTANCE SCHEMES

121. Employers registered and/or incorporated in Malaysia who have registered with PSMB and pay the HRDF levy are eligible to apply for training grants (financial assistance) to defray all or a portion of the “allowable costs” of training attended by their employees. To be eligible for training grants under the HRDF, trainees must be Malaysian citizens.
122. Employers who contribute to HRDF are eligible to access their levy payments by claiming training reimbursements through various financial assistance schemes that are implemented by PSMB. For the most part, these schemes do not entail subsidies. The financial assistance provided by HRDF to employers is draw from the levies paid to the HRDF subject to the amount of the levy balance of each respective employer. The principal financial assistance scheme is the Training Assistance Scheme (SBL), which accounts for almost 90 percent of total outlays. Companies are responsible for identifying the training needs of their own employees and organizing appropriate training programs. There are virtually no restrictions on the type of training undertaken by companies. Companies are eligible for reimbursement of allowable costs from their levy balances. The SBL-Khas scheme is essentially the same as the SBL; however, under this scheme, HRDF debits the employer’s levy account and pays the training provider directly upon authorization of the employer. SMETAP is somewhat different. In this scheme, HRDF organizes training courses in conjunction with training providers and offers them to companies. However, here again, course fees are deducted from levy balances.¹⁰⁷

104 SMEs are defined by the number of employees. For companies in the manufacturing sector, the cut off is 200 employees; for all other sectors the figure is 75. (This definition differs from the one used by the Department of Statistics Malaysia and the SME Corporation). See Attachment A.

105 Correspondence.

106 Ibid.

107 While this scheme is listed in the HRDF website, there is no information on available SMETAP courses. Moreover, the Annual Report for 2016 does not include any information on the number of courses that were offered or the number of people trained under this scheme.

Table A22. Selected Financial Assistance Schemes

Scheme	Description
Training Assistance Scheme (SBL)	The SBL scheme is the main funding scheme of HRDF. Employers are allowed to identify their own training needs and to implement their training programmes to retrain and upgrade their employees' skills in line with their operational and business requirements.
Special Training Assistance Scheme (SBL-KHAS)	The SBL-Khas scheme is similar to the SBL, but is intended to assist employers who are facing cash flow problems. Under this scheme, HRDF debits the employer's levy account and pays the training provider directly upon authorization of the employer.
Joint Training Scheme (SLB)	This scheme enables several SMEs to jointly appoint a training provider to conduct training for their employees and share the cost. One of the employers acts as the 'organiser' who will determine the type of programme required, engages a suitable training provider and determines the venue for training. The 'organiser' also is responsible for determining the cost per employee to enable participating employers to claim the "allowable costs" incurred upon the completion of training.
On-the-Job Training Scheme (OJT)	The scheme provides financial assistance to employers to enable supervisors or skilled workers to train unskilled workers based on a structured training plan. It was originally targeted to SMEs; however, the scheme was open to all registered employers in 2017
SME Training Partners Scheme (SMETAP)	The scheme provides financial assistance to SMEs for training programs organized by HRDF and training providers.

Sources: HRDF Annual Reports, Employers Circular No. 1/2017 dated 27 March 2017, and other HRDF documents

123. HRDF has also established several schemes that involve subsidies financed through a combination of monies made available from the Consolidated Fund,¹⁰⁸ government grants, and HRDF retained earnings. This include the SME Training Needs Analysis Consultancy Scheme, which provides grants to SMEs to enable them to retain consultants to conduct an analysis of training needs and prepare a training plan free-of-charge. Companies are only eligible for support once.

KEY POLICIES AND PROCEDURES

APPLICATION PROCESS

124. For the most part, prior approval for training must be obtained from HRDF in order to be eligible for reimbursement. Companies are required to apply for financial assistance online, identifying the training provider, location of training activity, the type and duration of training, level of certification, list of trainees, and estimated cost.¹⁰⁹ Approval is rarely, if ever, denied.¹¹⁰

125. Effective January 2011, training providers are required to register with HRDF. Providers must have a permanent office, and at least one local permanent trainer and at least one permanent support staff. This is primarily for administrative purposes; there is no certification of the competency of providers. As of 31

December 2016, more than 3200 training providers were registered. HRDF is in the process of establishing a system ("Star Rating") to rate training providers; all trainers will need to submit relevant forms and receive a score in order to register with HRDF. The rating system is based on nine criteria: corporate strategy, training programs, customer management, capacity and capability building, quality system, office management, participation in industry association and PSMB activities, and value-added services.¹¹¹ The names of 36 training providers with 4-5 stars are currently listed on the HRDF website.¹¹²

COST-SHARING POLICY

126. There is no cost-sharing per se. Companies draw down on fund balances in their levy accounts under the principal financial assistance schemes, including SBL. In general, employers are able to recover 100 percent of all "allowable costs" associated with the training. Allowable costs include course fees, training materials, training venues, daily allowances, and transportation. These are subject to specific rules dealing the required number of participating trainees as well as the maximum daily fees per trainee, maximum daily allowances, and other cost items based on the type of trainer (internal trainer, local external trainer, or overseas trainer) and training venue (employer's premise, trainer's premise, or hotel).¹¹³ For example, the

108 In the 2016 budget speech, Prime Minister mandated that PSMB allocate 30 percent of the HRDF levy to a consolidate fund. Monies are earmarked for five initiatives: i) establishment of outreach centers to counsel, retrain and place retrenched workers in new jobs; ii) training of the "local talent" to reduce employers' dependence on foreign workers; iii) training program aimed at boosting employment prospects of un-employed graduates (Future Workers); iv) establishment of certification / training programs in conjunction with 20 Sectoral Training Committees; and v) establishment of programs in collaboration with industry associations to help SMEs, which have insufficient levy balance, to obtain needed financial assistance for training.

109 HRDF System: User Guide for Employers, undated.

110 Correspondence.

111 Star Rating Workshop Presentation (undated) downloaded from <http://www.hrdf.com.my/wps/portal/PSMB/MainEN/Resources/Guideline/>

112 <https://apps.hrdf.com.my:8443/SearchStarRating/ViewStarRating?page=1&count=21&ln=1>

113 See Allowable Costs Matrix available on XX

current guidelines for the SBL and SBL-Khas suggest a maximum of RM 1300 per participant per day.

127. Subsidized programs, such as the SME TNA Consultancy, cover the full the cost of services.

FUND DISBURSEMENT

128. Companies are eligible for payment under the financial assistance schemes only if the trainees complete training. For example, under the SBL scheme: “A trainee is deemed to have completed the training programme if he had followed at least 75% of them and takes all the examinations / tests, if needed.”¹¹⁴
129. To receive payment, employers must submit an online claim form after the completion of the training program, along with relevant receipts. Claims are paid via check or e-disbursement to the employer or training provider depending on the scheme.

REPORTING AND FINANCIAL CONTROLS

130. The Enforcement Unit conducts verification/inspection visits “to ensure that the approved training providers comply with the terms and conditions stipulated by HRDF. A total of 1,142 inspections were conducted in 2016. As stated in the 2016 Annual Report, “It was encouraging that 100 percent of the training programmes complied with the terms and conditions of approval.”¹¹⁵ No further information is provided.
131. In 2016, 49 cases of potential fraudulent claims for training grants were reported to the Malaysian Anti-Corruption Commission (MACC). This resulted in eight convictions and one dismissal. Four of the remaining cases are still in trial and 35 are still being investigated.

BUDGET

132. An income statement for HRDF is presented in Table A23. The organization had income totaling roughly RM 299.6 million and expenses of RM 111.7 million, resulting in a net surplus of RM 187.8 million. Operating expenses totaled approximately RM 70 million; the largest single budget item was staff costs, which accounted for 45 percent of operating expenses.

Table A23. Income Statement

	2016 (RM 000s)
Income	
Income from operating activities	69,192
Income from human capital	25,221
Proceed under Consolidated Fund	205,169
Total income	299,582
Expenses	
Expenses from operating activities	70,050
Human capital development expenses	28,961
Expenses under Consolidated Fund	12,727
Total expenses	111,738
Net surplus	187,834

133. The income statement does not reflect funds awarded under financial assistance schemes. For that one needs to look at information on fund balances. As of 31 December 2016, the company had assets of RM 1.62 billion, including RM 1.25 billion in cash and cash equivalents to be used for activities related to the Employers Fund, Consolidated Fund, and Funds established for various government grants.
134. Levy payments received by HRDF are credited to the Employer’s Fund and held in trust for employers’ accounts. The Employers Fund is the principal source of funding for training programs. Monies are disbursed from the Fund to employers and training providers for approved training grants on a reimbursable claims basis. As shown in Table A24, RM 499 million was disbursed for training grants under all financial assistance schemes. In 2016, monies from the Fund were also transferred to the Consolidated Fund and used to support other initiatives.

114 <http://www.hrdf.com.my/wps/portal/PSMB/MainEN/Schemes/HRDF/SBL>

115 2016 Annual Report.

Table A24. Employers' Fund

	RM (000s)
Balance as of 1 Jan 2016	1,071,894
Add:	
Levy Collected	650,568
Allocation for 1MGRIP Fund (a)	14,478
SME Training Incentive Grant	6,481
Sub-total	671,527
Less:	
Disbursement of training grants	499,201
Transferred to Consolidated Fund (b)	176,532
Disbursement to 1MGRIP program	64,920
Other transfers and forfeitures	49,306
Balance as of 31 Dec 2016	953,462

Notes: (a) 1MALAYSIA Globally Recognised Industry and Professional Certification (1MGRIP) provides grants to companies to send their employees for professional certification programmes. (b) Effective 1 April 2016, 30 percent of the unused levy collected from registered companies was channelled to a Consolidated Fund along with an additional government allocation to carry out five "key strategic initiatives," including SME Up-skilling and Reskilling Programmes. In 2016, the Consolidated Fund accumulated RM 205.2 million and spent 12.5 million across all initiatives.

Source: Annual Report

135. From time to time, the Government provides grants to the HRDF to implement specific initiatives. Government grants are segregated and held in trust in separate Funds to be used in accordance with instructions of the Government. In 2016, the company maintained 18 separate funds for government grants, including, *inter alia*, the, SME Training Incentive Fund, SME Skills Upgrading Fund, and the SME Incentive (Non-HRDF) Fund. In addition, the board may elect to allocate a portion of retained earning to separate funds established for particular purposes, including the Training and Consultancy Fund and the SME TNA Consultancy Fund.

Table A25. Other Funds Specifically for SME Training (RM 000s) (a)

Fund	Source	Description	Balance 1 Jan 2016	Add	Less	Balance 31 Dec 2016
SME Training Incentive Fund	Government grant	Used to finance course fees charged by training providers to conduct training which will be credited to employers' levy accounts.	5,044	0	4,587	457
SME Skills Upgrading Fund	Government grant	Used to pay course fees of appointed training providers for training to SMEs.	3,920	15	2,273	1,662
SME Incentive (Non-HRDF) Fund	Government grant	Used to encourage SME employers to train their employees. In 2016, HRDF engaged "Hay Group" to conduct a diagnosis of competency requirements.	0	15,000	10,375	4,625
Training and Consultancy Fund	Retained earnings	Used as a revolving fund to "collect fees from participants and defray training expenses under SMETAP training programme and to finance employees who undergo overseas training and conferences.	4,074	14,822 (fees)	14,167	4,730
SME TNA Consultancy Fund	Retained earnings	Used to finance consultancy fees charged by consultants to conduct TNA and prepare annual training plans.	2,286	0	787	1,498

Notes: (a) The annual report shows a zero balance for the NHRC Fund at the start of 2016 with no additions or expenses during the 12-month period.

Source: Annual Report

SME PARTICIPATION

FINANCIAL ASSISTANCE APPROVED

136. The total of amount of financial assistance approved in 2016 was RM 569 million across all financial assistance schemes, for a total of 895,610 training places.¹¹⁶ Details on the principal schemes and those targeted toward SMEs are shown in Table A26.

Table A26. Financial Assistance Approved in 2016

Scheme (a)	Approved Financial Assistance (RM 000s)	Approved Training Places
Training Assistance Scheme (SBL)	501,995	836,659
Special Training Assistance Scheme (SBL-KHAS)	51,794	55,375
Joint Training Scheme (SLB)	14,840	32,336
On-the-Job Training Scheme (SME-OJT)	25	59

Notes: (a) The Annual Report does not include information on the SMETAP scheme.

Source: Annual Report

137. Participation in the SME TNA Consultancy Scheme is quite low. The 2016 Annual Report shows that 38 applications were received for the scheme through the National Human Resource Center. Of those, 25 were approved, 2 were still in pending decision at the end of the year, and 11 had been withdrawn or rejected. Of the 25 approved projects, 10 had been completed, 10 were in progress/process, and five had been withdrawn or rejected.¹¹⁷

138. All told, SME received roughly RM 220 million in financial assistance across all financial assistance

schemes, accounting for 84 percent of the funds paid into the levy by firms of this size. HRDF was not able to provide data on the number of enterprises that received financial assistance. However, using the levy utilization rate as a guide, the number of SMEs that received financial assistance in 2016 might have been roughly 12,000.

Table A27. Levy Collection and Financial Assistance by Firm Size

	Levy Collection (RM 000s)	Approved Financial Assistance (RM 000s) (a)	Levy Utilization Rate	Approved Training Places
SME	262,930	220,179	84%	358,388
Large	410,260	348,594	85%	537,222
Total	673,190	568,773	85%	895,610

Notes: (a) Only reported in aggregate for SBL, SBL-Khas, ITS, RPL, FWT and SME-OJT Schemes

Source: 2016 Annual Report

139. It is impossible to determine the penetration rate among SMEs. As noted above, the obligation to pay into the levy extends to employers in 63 sub-sectors in manufacturing, services, and mining/quarrying, which have ten or more employees. HRDF further defines SMEs as having a maximum of 200 employees. According to the Department of Statistics, there are roughly 135,000 small and medium sized companies in the relevant sectors,¹¹⁸ however, the definitions used by the organizations are quite different as shown in Table A28. Many small companies as defined by the Department of Statistics are likely to fall below the threshold for participation in HRDF financial assistance schemes.

Table A28. SME Definition Used by Malaysia Department of Statistics

	Small	Medium
Manufacturing	Sales turnover from RM 300,000 to < RM 15 million <u>OR</u> Employees from 5 to < 75	Sales turnover from RM 15 million to < RM 50 million <u>OR</u> Employees from 75 to < 200
Services and other sectors	Sales turnover from RM 300,000 to < RM 3 million <u>OR</u> Employees from 5 to < 30	Sales turnover from RM 3 million to less than RM 20 million <u>OR</u> Employees from 30 to < 75

116 The figures presented in the Annual Report are based on the following schemes: SBL, SBL-Khas, ITS, CBT, ALAT, FWT, IT, RPL, and SME-OJT. The report does not included data for SLB in the totals. The reason for this is not explained.

117 The 2016 Annual Report includes the following statement in the section dealing with the SME Instrument Division, "In 2016, a total of 3,351 SME employees were trained under the [Training Incentive Scheme], which includes training at the strategic and functional levels." It also notes, "A total of 743 SME employees benefitted by the [SME Skills Upgrading Programme] during its implementation in 2016." No further information on the schemes is available.

118 Economic Census 2011, Profile of Small and Medium Enterprises (reference year 2010), Department of Statistics, Malaysia.

Attachment - Other HRDF Financial Assistance Schemes

Scheme	Description	Approved Financial Assistance (RM 000s)	Approved Training Places
Industrial Training Scheme (ITS)	This scheme provides financial assistance to employers that sponsor students from university, college or training institution for practical training at their premise. The objective of this scheme is to expose the student to work experiences as well as ethics at the workplace and also to provide employer with a skillful future workers. The minimum duration of the training program is two months and the maximum duration is eight months.	4,940	3,226
Computer-Based Training Scheme (CBT)	The scheme provides financial assistance to employers for the purchase and/or development of training software (CBT).	4,813	NA
Purchase of Training Equipment and Setting up of Training Room Scheme (ALAT)	The scheme provides financial assistance to employers to purchase training equipment and set up or refurbish training rooms.	3,573	NA
Future Workers Training Scheme (FWT)	The scheme provides financial assistance to employers to send "high-potential" candidates for training before they are employed as permanent workers. It is mandatory for trainees to be offered employment upon completion of pre-employment training.	993	46
OKU Talent Enhancement Program (OTEP)	The scheme provide financial assistance to cover 100% of the cost of employees with disabilities (PWD) to undergo specialized training in selected sectors	796	122
Information Technology and Computer-Aided Training Scheme (IT)	This scheme provides financial assistance to employers to purchase personal computers for computer-based training. Employers are eligible to receive a maximum amount of RM 25,000 over three years. (Notebooks and laptops are not eligible.)	559	NA
Recognition of Prior Learning Scheme (RPL)	The scheme provides financial assistance to employers to cover the registration fees charged by the Department of Skills Development to certify workers who do not have any formal certification but have obtained the relevant knowledge, experience and skills in the workplace based on their competency levels (SKM, DKM or DLKM).	81	245

ANNEX B. LEVY-BASED TRAINING FUNDS WITH INCENTIVE SCHEMES

Country	Organization
Barbados	TVET Council/ NTF
Benin	FODEFC
Botswana	BOTA
The Gambia	NTA
Kenya	NITC
Malawi	TEVETA
Mauritius	HRDC/NTF
Namibia	NTF
Nigeria	NIGERIA ITF
South Africa	NSF + 23 Sectoral Training Funds (SETAs)
Zimbabwe	ZIMDEF
Algeria	FNAC
Jordan	TVET Support Fund
Morocco	OFPPT
Turkey	Not available
Belgium	11 Sector Training Funds
Cyprus	HRDA
Denmark	10-15 Sectoral Training Funds
France	OPCA
Greece	LAEK
Italy	14 Sectoral Training Funds
Ireland	NTF
Netherlands	89 Sectoral Training Funds (O&O)
Poland	Not available
Slovenia	Not available
Spain	FORCEM
Sweden	TSL
United Kingdom	25 sector skills councils
Fiji	TPAF
Malaysia	HRDF
Marshall Islands	NTF under NTC
New Zealand	Not available
Singapore	SDF

Source: Johanson (2009)

ANNEX C. PROFILES OF OTHER FUNDING SCHEMES

EAST ASIA AND PACIFIC

Scheme	Vocational Ability Development Program
Disbursement type	Levy-grant plus non-financial assistance
Country	Korea, Rep. of
Region	EAP
Establishment and status	VADB 1997 – ongoing SME Training Consortia Program 2001 - ongoing
Funding source	Levy
Executing agency	Ministry of Employment and Labor and HRD Korea SME Training Consortia Program -- Korea Chamber of Commerce and Industry (KCCI) under agreement with the Ministry of Labor
Description	<p>Proceeds from the levy are used to finance in-plant training, paid educational leave, training courses outside the firm, and subsidies to individuals (employees and individuals). Also, firms (especially SMEs) may receive support for training facilities and equipment.</p> <p>An 18-month pilot of the SME Training Consortia Program was launched in June 2001. Local KCCI helped organize training consortia and funded two “training managers” for each consortium to conduct needs analysis, develop training plans, and contract with training providers. SME training consortia applied for grants under existing levy scheme for training. The program was “mainstreamed” in 2003. However, it appears to have evolved significantly since then. The current SME HRD Consortia program centers on grants to large enterprises and universities that undertake to work with SMEs.</p>
References	Muller (2012), Smith (2015), Lee (2016) www.moel.go.kr http://www.hrdkorea.or.kr/ENG/2/2

Scheme	Skills Development Fund
Disbursement type	Levy-grants
Country	Singapore
Region	EAP
Establishment and status	1979 -- ongoing
Funding source	Levy
Executing agency	SkillsFuture Singapore Agency (SSGA)
Description	<p>Every enterprise is obliged to contribute 1% of the monthly pay for each worker who earns S\$ 2 000 or less a month. In effect, firms with a high percentage of low-wage workers contribute more to the funds. SDL collected are channeled to the Skills Development Fund (SDF), which is used to support workforce upgrading programmes and to provide training grants to employers. The SDL and SDF are administered by the SkillsFuture Singapore Agency (SSGA). Financial incentives are not tied to the levy contribution.</p> <p>SSGA launched the Enhanced Training Support for SMEs, which provides higher subsidies for approved courses (up to 90%). More than 8,000 courses fall under this scheme; this includes certifiable courses supported by SSG and academic CET courses offered by the five Polytechnics and Institutes of Technical Education.</p>
References	Muller (2012), ADB (2014b), Smith (2015) https://sdl.ssg.gov.sg/FAQ1.aspx

EUROPE AND CENTRAL ASIA

Scheme	Training Vouchers (Chèques Formation)
Disbursement type	Training vouchers
Country	Belgium (Wallonia)
Region	ECA
Establishment and status	2004 – ongoing
Funding source	Wallonia Government
Executing agency	FOREM and Wallonian Ministry of Employment

Description	Employers can purchase a voucher worth 30€ for 15€. Each voucher covers the direct cost of one hour of training from a certified training provider. The number of vouchers that companies can purchase depends on their size. Training must take place during normal working hours.
References	OECD (2004), ORSEU (2009b), Muller (2012), Stone (2012) emploi.wallonie.be/home/formation/cheques-formation.html

Scheme	Enterprise-Based Training Program
Disbursement type	Levy-Grant
Country	Cyprus
Region	ECA
Establishment and status	1980 – ongoing
Funding source	Levy on payroll
Executing agency	Human Resource Development Authority
Description	ORSEU (2009). Training organizations may submit their applications every semester for HRDA subsidies. After approval, the authority sets the subsidy. The employer pays the difference. Subsidies are paid once the participant has successfully completed the course and earned a certificate.
References	ORSEU (2009b) http://www.hrdauth.org.cy/

Scheme	Training Voucher (Bildungsscheck)
Disbursement type	Training voucher
Country	Germany (North-Rhine Westphalia)
Region	ECA
Establishment and status	2006 – ongoing
Funding source	Ministry of Labour, Health and Social Affairs NRW and ESF
Executing agency	Ministry of Labour, Health and Social Affairs NRW
Description	Vouchers provided to SMEs (<250 FTE) for continuing vocational training of low wage employees (taxable annual income of up to 30k euro). The program focuses on immigrants and low-skilled workers. All applicants have to go through an assessment at one of the 220 participating training institutions (e.g. chamber of commerce or Volkshochschule). Vouchers cover 50% of course fees, up to maximum EUR 750. Each voucher can be used for a single course only by a single person. Employers eligible for up to 10 vouchers in a two-year period. Only work-related courses organized and held by accredited training institutions are allowable.
References	Gorlitz (2009), ORSEU (2009), Muller (2012) https://www.weiterbildungsberatung.nrw/foerderung/bildungsscheck

Scheme	Established SME Funding
Disbursement type	Matching grants
Country	Ireland

Region	ECA
Establishment and status	NA
Funding source	General Revenue
Executing agency	Enterprise Ireland
Description	Enterprise Ireland offer a broad range of grants for “Established SME” defined as a company that has an established trading record, employs between 10 and 250 employees, has either an annual turnover of less than €50m or an annual balance sheet of less than €43m. Funding is available to retain consultants to undertake lean projects, formulate strategic plans, develop marketing strategies, develop new products/services, and establish sound environmental practices.
References	www.enterprise-ireland.com

Scheme	Sector Training Funds (O&O)
Disbursement type	Levy grants
Country	Netherlands
Region	ECA
Establishment and status	Ongoing
Funding source	Levies and ESF
Executing agency	
Description	Over 100 sector training funds (also known as labour market funds) have been established through collective labor agreements in the Netherlands and operate under tri-partite bodies. The funds provide funding for collective training for employers who allocate the training amongst their employees, individual training for employees, and training plans submitted by employers. Also, on-the-job training and training for disadvantaged groups are a part of most funds’ agendas. In addition, some funds have advisors visits and support companies in identifying and formulating their training needs. Some funds also provide compensation for internal training courses. Co-financing on the part of employers, however, is usually required; the funds cover only a percentage (mostly 50% to 80%) or a maximum amount per year.
References	Kamphius (2010) Muller (2012), Smith (2015).

Scheme	Voucher Counseling System (VCS)
Disbursement type	Voucher
Country	Slovenia
Region	ECA
Establishment and status	2002 - NA (Note: This program may no longer be in existence.)
Funding source	General Revenue and ERDF
Executing agency	
Description	The main objective of the VCS is to offer consulting services to SMEs through a number of government supported intermediaries following the following three rules: (1) subsidized and controlled prices of consulting, (2) recruitment system for consultants in order to ensure quality of services and, (3) geographical spread in order to make services available throughout the country. In the first four years of its operations, the scheme was entirely finance by the government and from 2004 on when Slovenia became full member of the European Union it was co-financed from the European structural policy sources (ERDF).
References	Vadnjal (2011)

Scheme	Employer Training Pilots (ETP)
Disbursement type	Grants
Country	United Kingdom
Region	ECA
Establishment and status	2002-2006. The pilot program was a forerunner to the national Train to Gain program, which was established in 2006 and ceased operating in 2010.
Funding source	NA
Executing agency	NA
Description	Under the program, financial incentives were given to employers to provide qualification-based training to their low-qualified employees. Participation in the ETP program was voluntary, and the decision to participate was made by the employer. The program included subsidized training to a basic skills or NVQ level 2 qualification; paid time off for training; wage compensation (paid to employers); and information, advice, and guidance to employers and employees.
References	Abramovsky (2011).

Scheme	Sector Education and Training Authorities
Disbursement type	Levy-grant
Country	South Africa
Region	SSA
Establishment and status	1999 - ongoing
Funding source	Training levy
Executing agency	Sector Education and Training Authorities (SETAs) National Skills Authority under the Department of Labor
Description	All private enterprise must register with a Sector Education and Training Authorities (SETAs). A Skills Development Levy (SDL) is assessed on all private enterprises with annual payroll above R500,000. Twenty percent of the total levy goes to the National Skills Fund; the remaining 80% is allocated through the Department of Labor to 20 or 20 SETAs. The SETAs provide grant to enterprises. Employers receive a rebate of 50% of their levy contribution based on the submission of annual workplace skills plan and an annual training report. Additional grants are discretionary. (Note: significant problem have been reported and reforms are being implemented.)
References	Johanson (2009), Muller (2012), Ministerial Task Team on SETA Performance (2013), Allais (2015), http://www.labour.gov.za/DOL/

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