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# How to make Polish SMEs more innovative?

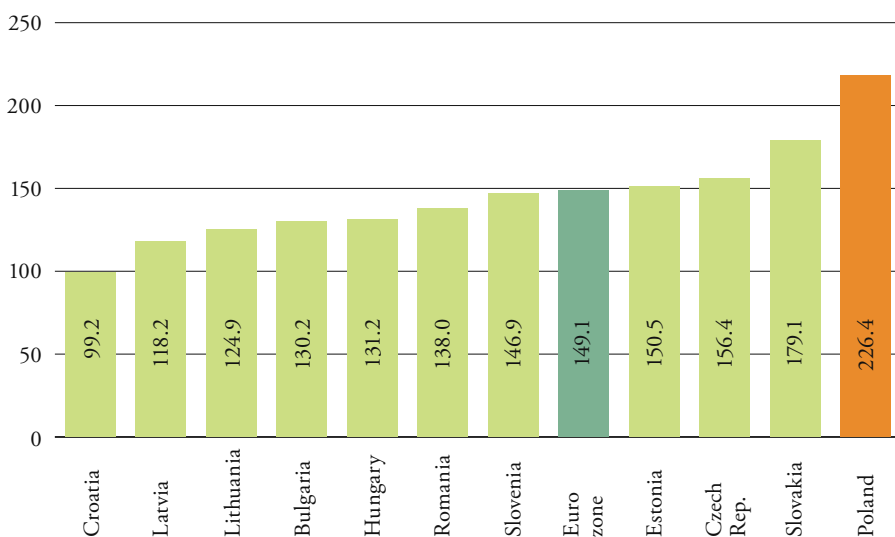
Since 1989, Poland has been the fastest growing economy in Europe, raising its real GDP per capita by almost two and half times, more than any other European economy (Figure 1). Poland has become Europe's growth champion for the first time in its history and has entered its Golden Age [Piatkowski, 2013].

However, there are doubts whether this enviable performance can be sustained in the future. There is a strong consensus among economists, experts and policy makers that to sustain fast growth, Poland will need to enhance its innovation potential and shift from imitating to innovating. To achieve it, it will need to provide incentives for the private sector to become more innovative and enhance

the quality of public support. However, calibrating the rights incentives and providing the highest quality of public support requires a solid understanding of the needs of companies in Poland with an innovation potential.

With this objective in mind, and at the request of Poland's Ministry of Economic Development ("MoED"), during 2014-2015 the World Bank conducted a large study on Polish SMEs to identify key drivers and constraints on SME innovation, discover firms with the most innovation-based growth potential, and assess the quality of public support for innovation-oriented SMEs. This article shares some of the highlights of the study, including the methodology, main results and policy recommendations. World Bank [2016] presents the full results.

Figure 1 Changes in real GDP per capita, 1990-2016, 1989=100



Source: Piatkowski [2018] based on the Conference Board Total Economy Database.

## Box 1 Typology of companies applied in the analysis

**Champion**—a top-class company that has strong leadership, an innovation-focused mind-set, and a clear vision of its development. It actively monitors business, market, and technology trends; systematically seeks knowledge domestically and internationally; constantly looks for new market opportunities (adopts a preemptive or proactive market behaviors); follows good management practices; and is strongly connected with a network, including within its value chain (customers, suppliers).

**Emerging champion**—a very good company that demonstrates many features of a “champion”, but it has not yet demonstrated that it can scale up its growth path and expand on its innovation track record.

**Sleeping beauty**—a company that exhibits several behaviors of “champions”; it is doing well and has potential to develop quickly, but it lacks exposure or has not yet capitalized on opportunities that could make it grow faster. Such firms usually do not realize what they need to accelerate their growth or do not have access to the necessary services or skills. They typically underappreciate opportunities inherent in foreign expansion, they tend to be understaffed in the marketing and R&D areas, and they display fewer networking behaviors.

**Steady state**—a company that is reasonably successful, but is conservatively managed, with a low level of ambition, distrustful of outsourcing, lower networking scores, small overseas presence, and not much visionary ability. Management is risk averse, is comfortable with the status quo, and passively reacts to market trends. It has limited track record of innovation.

**Declining**—a company that typically scores low on dimensions of clarity of vision, growth, and ambition; it is usually locked in stagnant and/or declining markets, is incapable of foreign expansion/presence, has poor networking behavior, has weak access to knowledge, and has no track record of innovation.

Source: World Bank [2016].

## Methodology

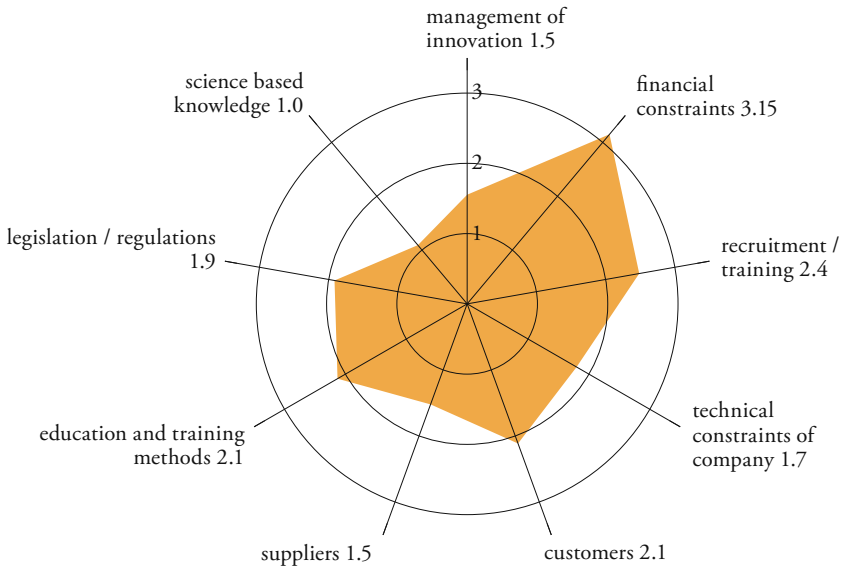
The findings of the study are based on more than 500 in-depth and face-to-face interviews conducted by the World Bank team during 2014-15 in four Polish regions (dolnośląskie, śląskie, świętokrzyskie and zachodniopomorskie), supplemented by 20 “Smart Labs” (moderated group meetings of entrepreneurs, scientists, business advisors and administration), innovation maps and crowd-sourcing [World Bank, 2016]. A quota sampling method was used to select companies for interviews, based on the business profile, type of industry (each company had to fit into ten thematic areas, the so-called “smart specializations”, selected by the MoED), size (mostly SMEs), age (at least 15% of young companies below 5 years) and innovation intensity.

The methodology aimed at collecting high quality information from top company managers (usually company owners or CEOs) to produce credible results. Interviews usually lasted 2 to 2.5 hours and were conducted on a basis of a questionnaire with 100 qualitative and quantitative questions. Interviews were conducted

by private sector experts with significant professional experience (often more than 20 years) in innovation development and business advisory. High quality of experts helped attract top management of companies to the interviews. The interviewing experts also probed interviewees to solicit relevant information and applied their knowledge and experience in assessing the company’s take on innovation. Focus on the quality of input data helped differentiate the study from other surveys, which tend to be filled by respondents, who might not have a complete overview of company’s performance and strategy.

Other main innovation and enterprise surveys, such as Eurostat’s Community Innovation Survey or the EBRD’s and World Bank’s Business Environment and Enterprise Performance Survey, served as a reference point for creation of the questionnaire. However, since the study could take advantage of the face to face interactions of experienced experts and company owners, the questionnaire included several qualitative and open ended “why” questions, which are usually not present in other innovation and enterprise surveys.

Figure 2 Firm-level innovation constraints

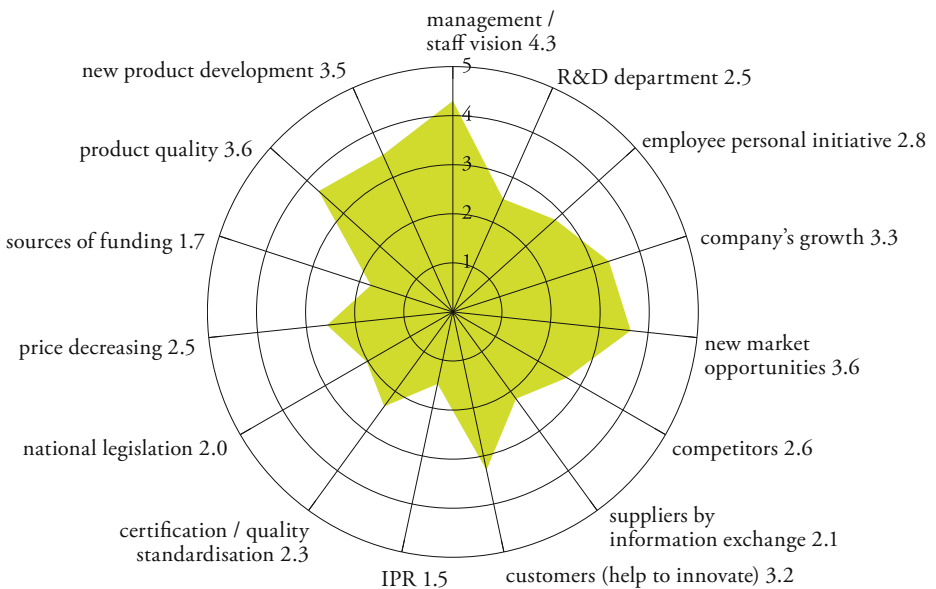


Source: World Bank [2016].

The study also used expert judgment to assess company’s overall performance and group the interviewed enterprises into five categories: “champions”, “emerging champions”, “sleeping beauties”, “steady state”, and “declining” (see the definitions in Box 1). The assumption behind this division was that a well-performing company – a company with robust exports, growing revenues, competitive products and a well-educated management – will need a different type

of support than a declining company that loses its market position, does not export and fails to innovate. Different needs of such companies require different types of public support to achieve the biggest “bang for the buck” or the best value for public money. Focusing public support for innovation on the “champions”, “emerging champions” and “sleeping beauties” could deliver better outcomes than on other groups of companies.

Figure 3 Firm-level innovation drivers



Source: World Bank [2016].

## Analysis of results

The results of the interviews showed that access to financing and to the high-quality labor force are one of the key barriers to innovation. Companies were asked to assess the importance of several factors on the scale 0-5 (where “0” stands for “not a problem at all” and “5” for a “key problem”). The top constraint was the difficulty to finance innovation (3.2 on the 0-5 scale; Figure 2). Companies found it difficult to access finance both from the banks (mostly because of lack of collateral for risky ventures) as well as from the public sector (because of the long and costly application process). The second most important feature was the quality of labor. Companies experienced difficulties with recruiting quality employees from the market. At the same time, many of companies did not invest enough in trainings to build competences of existing staff. Finally, low perceived level of customer interest in new, innovative products, was also seen as an important barrier.

As to the drivers of innovation, management’s mindset, new opportunities on the market and the need to improve quality of product/services were the most important ones (Figure 3). In particular, the quality and the innovative mindset of the company’s management tended to be the key driver of innovation. The objective of accessing new markets was another

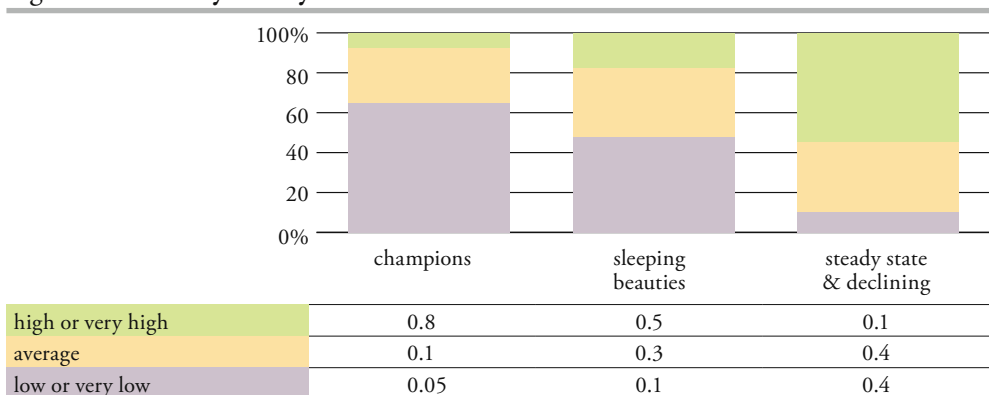
driver of innovation. Finally, high quality of the product or service was also important. Companies that thought that they needed to be “paranoid” and perpetually improve their products and services were the ones to invest the most in innovation.

Among the interviewed companies, the management of “champion” companies had significantly better visionary ability than management in other companies (Figure 4). Champions scored highly because their management usually had a clear view of the company’s vision, growth milestones and risks. Management of “sleeping beauties” was usually able to determine the general direction of the company’s development, yet lacked details. Management of other companies was focusing mainly on day-to-day survival rather than on future development.

R&D intensity was a strong determinant of company’s competitiveness (Figure 5). Although R&D itself is not the only key to innovation, the best companies (i.e. champions) were spending significantly more on R&D than others. Companies with the negligible shares of R&D spending tended to have the least robust growth potential across all other dimensions of firm-level competitiveness.

Most interviewed companies seem to either have had a bad experience of accessing the public innovation support system, or did not attempt to access it in the first place (Figure 6). Efficient public inno-

Figure 4 Visionary ability



Source: World Bank [2016].

vation ecosystem needs both good programs addressing companies’ needs and an accessible way to obtain it. Interviews showed that whereas companies were quite familiar with both national (2.8 on the 0-5 scale) and regional potential public support (3.0), they chose not to apply for the support due to arduous application processes (1.6). The level of satisfaction of cooperating with the public Research and Development Institutes (RDIs) was also low (2.0 on the 0-5 scale).

### Conclusions and policy recommendations

The full results of the interviews, documented by World Bank [2016], help provide several observations.

First, interviews proved that innovative companies are a diversified group and they require different types of support and policy instruments. While relatively few Polish companies operate at the technology frontier, they offer a significant growth potential and require specific and targeted support, including in marketing, entering foreign markets and upgrading of skills. Success of such companies may be spectacular and have positive spillover effects on other companies. However, for most of the companies in Poland, technology absorption seems the most feasible development path in the near future. These companies also require tailored public support, but their needs are much different than for frontier companies.

Table 1 Matrix of selected firm needs and proposed matching public support

Type of company	Identified need	Possible instruments of support	Providers of services
“Champions” and “Emerging champions”	Building competitive advantage at international level	Specialized coaching/mentoring Specialized information on R&D/internationalization Trade missions Internationalization programs Internationalization readiness audits International B2B meetings Financing foreign investment Networking in value chains	Specialized consultants Specialized BSIs VC capital Business angels Banks
	Business upscaling	Equity Guarantees Debt financing Business development programs Managerial trainings	VC capital Business angels Banks BSIs
	IPR protection	Specialized legal and technological advisory services Co-financing IPR procedures International technology benchmarking—open platforms or specialized analyses	Specialized consultants and patent counsellors Specialized BSIs Universities and technology transfer centers
	R&D development	Grants Technology loans Networking opportunities (open days, boot camps, competitions and prizes for R&D ideas)	Institutions managing national and regional operational programs Banks and VCs
	Availability of hard skills	Specialized trainings for employees	Universities Vocational schools
“Sleeping beauties”	Upscaling competences for managers	Workshops Training Consulting	Consultants BSIs
	R&D stimulation	R&D vouchers Information about IPR protection	Institutions managing national and regional operational programs
	Improving marketing competences	Vouchers for marketing innovation Consulting/mentoring	Institutions managing national and regional operational programs BSIs

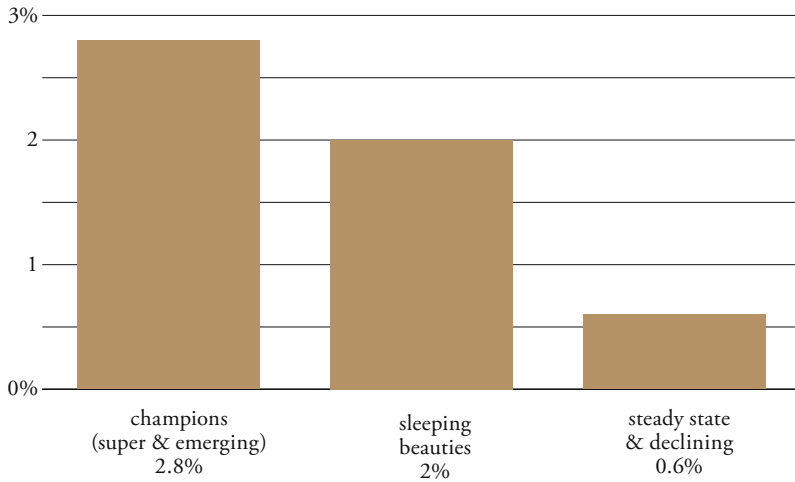
All SMEs	Improving management practices	Workshops Training Benchmarking Management audits	Consultants BSIs
	Building preemptive and proactive attitudes: strategic innovation management	Strategic business and technology coaching Specialized trainings for companies in innovation management skills (innovation MBAs)	Specialized consultants Specialized BSIs Universities
	Financing innovation	Grants Technology loans Matching grants Soft loans Equity Guarantees Debt financing	Institutions managing national and regional operational programs Banks
	Networking	B2B and business-to-science events Business and science consortia Key clusters	BSIs Universities Cluster organizations
	Access to knowledge: technological and market trends, economic intelligence	Technology audits Seminars and workshops Providing specialized analyses Specialized trainings National and international benchmarking Market trends reports Brokering Seminars and workshops Publicly accessible databases/information portals BTRs	Specialized consultants Brokers Specialized BSIs (especially technology parks and incubators) Universities
	Implementing product, process, organizational, and marketing innovations	Innovation and technology audits Innovation vouchers R&D vouchers Grants	Specialized consultants Brokers Specialized BSIs (especially technology parks and incubators) Universities
	Better use of information sources	Upscaling competences of staff and management	Consultants BSIs
	Access to financing	Soft loans Equity Guarantees Debt financing Improving public support procedures	VC capital Business angels Banks
	Access to qualified human capital	Cooperation with technical and vocational schools Staff exchanges between universities and companies Specialized staff trainings	Vocational and technical schools Universities Technology transfer centers

Source: World Bank [2016].

Second, top performing companies (“champions”) should be cherished by the public support policy. Given their relative paucity—for instance, there are only about 1000 Polish companies that report R&D expenditures, which translates into about 60 companies on average per each of the Polish regions—the public sector should create a bespoke support systems for such “champions”. Such support sys-

tem is currently not readily available because the public sector, especially at the local level, usually does not have sufficient capacity to deliver sophisticated support. This is due to structural problems with the business support system, including lack of long term financing, unclear incentives, and lack of credible impact evaluation. Experienced private sector experts (former CEO, business advisors etc.)

Figure 5 R&D intensity by type of firm, R&D spending as % of revenue



Source: World Bank [2016].

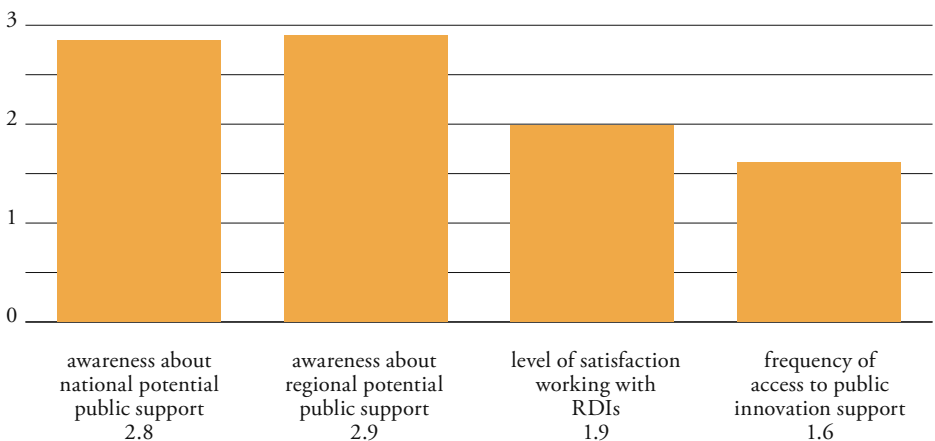
could provide such services, financed by a partnership between the public sector and the recipient companies.

Third, to address the innovative needs of enterprises, the public-sector approach will need to be modernized. It will be critical for the public sector to be able to address more sophisticated needs, such as mentoring or dealing with investors. It should also become more entrepreneurial, open, and proactive. Finally, it should focus support on priority groups, closely monitor performance and evaluate impact, and improve institutional capacity and staff skills. Proper matching of support instruments to the particular needs

of companies will be key to a more effective innovation support system. Table 1 contains an example of how different companies' needs could be matched with public support instruments and providers. Most proposed support instruments are not new to the Polish innovation ecosystem, but their efficiency leaves much room for improvement [Kapil, Piatkowski, Radwan, Gutierrez, 2013].

Finally, the low level of awareness of public support and smart specializations needs to be addressed. Polish SMEs often do not understand the intricacies of different support policies and find them difficult to access. Even though in all regions, as well as at the national level,

Figure 6 Public support and collaboration with RDIs (0-5)



Source: World Bank [2016].

there are information points and portals concerning European funds, they nonetheless seem to operate on the principle of “come if you find me” and do not actively

look for customers. This needs to change for the system to work properly and for the public money to bring the expected results.

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