Nordic Agenda 2017

As Their Lead Slips, Nordics Look to Revitalize Growth

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PREFACE

The Boston Consulting Group invests 2% of its time every year in pro bono activities in order to improve the world we live in using BCG's competencies in vital spheres for which there is no funding. In the Nordic region, this investment corresponds to eight full-time employees dedicated solely to pro bono activities. We define the Nordic countries as Denmark, Finland, Norway, and Sweden and refer to them as "the Nordics." This report, which focuses on increasing the competitiveness and economic development of the Nordic region, is part of this pro bono effort. It is a topic that BCG is very passionate about, as the firm is an integral part of the Nordic economies, supporting companies and public institutions with a team of more than 400 employees across the four Nordic capital cities. As citizens of the Nordic countries, we want to contribute to a successful continuation of the Nordic model.

In this report we continue presenting our research on a transformation agenda for the Nordic countries and outline our recommendations—as we have in previous years.

We believe that although the Nordic model has served our countries well in the past few decades, enabling them to become some of the wealthiest and happiest in the world, the Nordics need to transform in order to unleash their great potential to continue to create wealth and well-being for their people.

Our recommendations focus on how to maximize wealth in the Nordics and are based on our quantitative and qualitative analyses. We do not take political considerations into account or take political stands. We also do not focus on how to distribute the wealth; that is a task that we will leave to others.

Our recommendations are based on a proven methodology that has been developed from our experience helping more than 500 institutions worldwide implement their transformations. Although this transformation methodology is primarily used by businesses, we will argue that many lessons from business transformations are also highly relevant to the transformation efforts of countries.

EXECUTIVE SUMMARY

After more than a half-century of economic and social success, Nordic countries are confronting the reality that they must make changes. The countries' ability to keep providing world-class social benefits is in question because of changes that are eroding the foundation of their economies. These changes include the rise of new global competitors and the shift of more of the world's economic activity to the digital realm. While Nordic countries are still operating from a position of strength, their future is no longer assured.

An especially big challenge for the Nordics (Denmark, Finland, Norway, and Sweden in the case of this report[1]) is ensuring that a steady stream of fast-growing companies continues to emerge from their private sectors. Such companies have historically made an outsize contribution to Nordic economies, in some cases becoming leading global brands. Whether the Nordics can keep producing these sustained growth companies at anything like the previous pace isn't clear. But that's what's needed. Corporate mortality rates on Nordic stock exchanges (the proportion of companies that disappear from the exchanges every few years) have reached levels that once would have been unimaginable.

In the short term, there are enough relatively big, relatively successful Nordic companies to keep the countries' economies healthy. In the long term, a replenishment of old fading companies with dynamic new ones is essential if the countries are to avoid a secular decline.

The Boston Consulting Group (BCG) analyzed 73 sustained growth companies in the Nordics to get a sense of what some of the best companies already do—and to see what example they might set for others. We also analyzed the interplay between government policy and private-company growth to get an idea of how regulatory, tax, and economic policy in these countries promotes (and sometimes hinders) individual company success.

Our main findings relate to three areas:

Funding the journey

- Nordic companies must find ways to preserve margins even while they're growing. They must also generate as much free cash flow as possible in order to fund future growth.

- For their part, Nordic countries—which with the exception of Norway have run deficits since the financial crisis of 2008—must do a better job of managing their public expenditures and of improving productivity. Otherwise they will not be able to support new private initiatives.

Winning in the medium term

- The lead that Nordic companies and countries once held in innovation and R&D is shrinking as others become more competitive in these areas. The decline shows up in metrics like R&D intensity (that is, R&D spending as a percentage of GDP) and the number of patents applied for in the Nordics versus elsewhere. If Nordic companies excelled at commercializing their R&D, the numbers might not be so worrisome, but that is not the case. More coordinated efforts are needed, including public-private innovation partnerships.

- The biggest sign of slippage is in the digital realm. Nordic companies are at a disadvantage because of regulations that restrict new business models and that inadvertently discourage startup activity. The countries need to do more to promote entrepreneurship and develop forward-looking technology agendas. They must also increase the availability of venture capital, which has become one of the most effective lubricants of new-company formation globally in the last 45 years.

- Nordic countries must also establish better support structures for their small and medium-sized enterprises, which often get to a certain size and then no longer try to grow. With the right kind of support, including government-funded trade agencies, SMEs could focus on international expansion. Increased exports would allow SMEs to make a more significant contribution to Nordic economies, with benefits for the countries' tax bases, employment sectors, and national wealth.

Organizing for sustained performance

- Nordic companies must have executive teams that are focused on growth. And they must be agile in their approach to growth, both with respect to strategy development and in their willingness to experiment with unconventional organizational structures.

- Nordic countries face their own talent and organizational challenges. Chief among these is the disruption that digitization is introducing into the countries' economies. A significant amount of retraining and redeployment will be needed in the next decade. In addition, Denmark, Finland, Norway, and Sweden will need to expand their domestic labor bases and adopt new immigration policies to make sure their talent pools are sufficient, in both size and skills, to carry them into the future.

The changes that are needed aren't small; in many cases they are transformative. However, we believe it's better to start now, when the alarm bells are just becoming audible and the bigger danger is still several economic cycles off. A lot can be accomplished if businesses and governments undertake the transformation jointly. And they should want to: they are in this together.

NOTE

1. Iceland and other territories including Greenland are also part of the Nordics, but are outside the scope of this report.

THE NORDIC MODEL FACES A TEST

For the last half century, being a citizen of a Nordic country has come with some of the most generous government benefits in the world. To be a Dane, a Finn, a Norwegian, or a Swede was to have access to a free university education and never worry about health care or about being poor after retirement. Partly as a result, the Nordics have historically had some of the highest happiness quotients of any countries in the world.

With the pace of change accelerating, these countries must break from their pasts.

These benefits have been possible because of the countries' long-term thinking in many areas that contribute to economic and social development. The expansion of Nordic workforces, the increasing participation of women in those workforces, and the huge investments that the countries have made in engineering and innovation, have set the countries apart from much of the rest of the world. Partly as a result, a disproportionate number of multinational corporations have grown up on Nordic soil. These corporations have outperformed global equity markets, created millions of jobs in their countries of origin, and, through the taxes they pay, helped keep government coffers full.

Increasingly, however, the Nordic model is in jeopardy. The competitive environment for the world's biggest businesses has become more challenging everywhere—a fact evident in the sharp rise in corporate mortality rates in stock markets in recent decades. About one in three US companies now disappears from the stock market in any given five-year period—and the same is true of Nordic companies. Fifty years ago, the number of companies disappearing from the stock market (in both the US and the Nordics) was closer to one in 20. While the increased pace of Nordic-company exits is partially explained by acquisitions or business failures that are situation- or industry-specific, a lot of it stems from the faster pace and higher incidence of disruption in many industries. We are living in turbulent times.

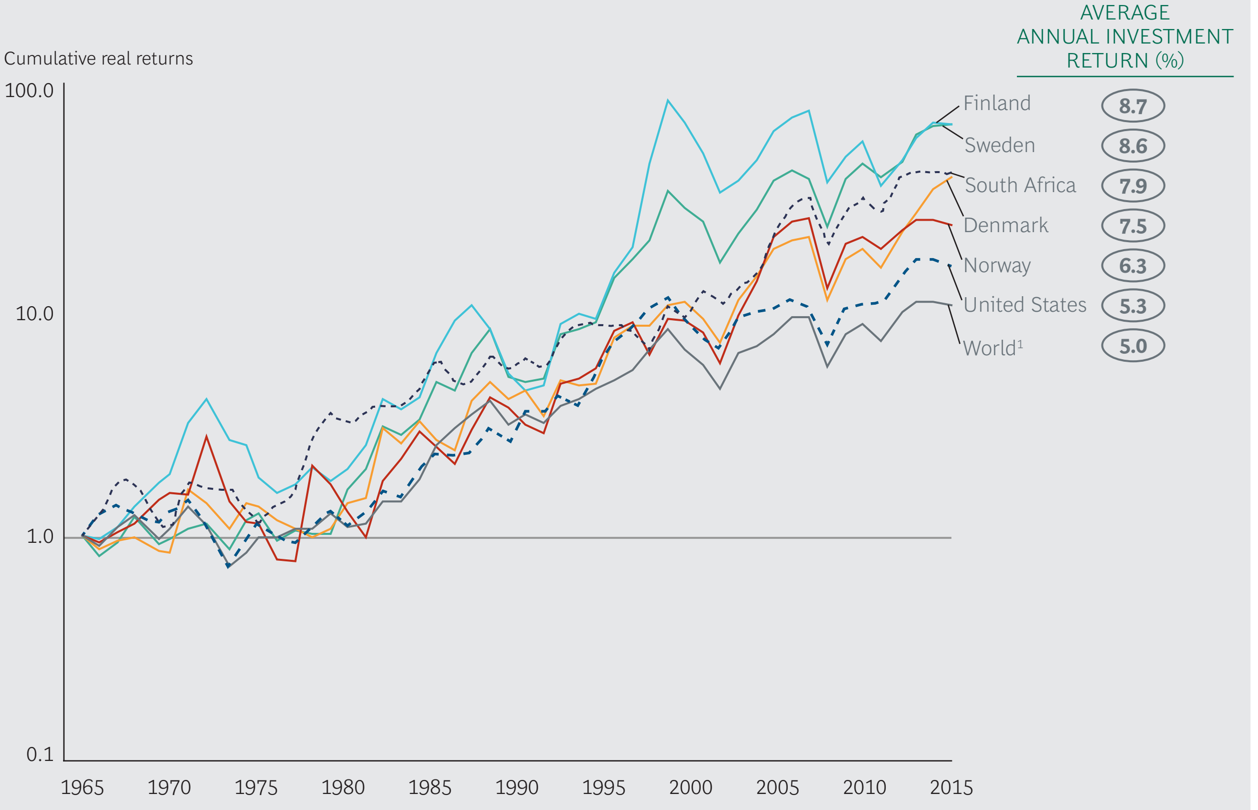
Incrementalism, the approach to change that feels most natural in the political and social context of Nordic countries, is not going to suffice. Instead, Nordic companies and policymakers should set a more ambitious transformation agenda, and pursue it jointly. In this year's installment of the Nordic transformation report, we focus on what it will take for Nordic companies to find sustainable growth and for the countries to keep hatching internationally successful multinational companies.

THE IMPORTANCE OF COMPANY GROWTH

The strong stock market performance of the Nordic's top companies over the last 50 years has provided the countries with a major source of wealth (see Exhibit 1).

Nokia's run at the top of the handset industry is over, but during the 20 years its business was flourishing, the company was directly responsible for the flow of about €100 billion

Exhibit 1 | Nordic equity markets have outperformed others for half a century



Source: Credit Suisse Global Investment Returns Yearbook, BCG analysis.
Note: The vertical axis uses a logarithmic scale with 1966 as the base.
[1]Credit Suisse World Index (based on 21 established stock markets).

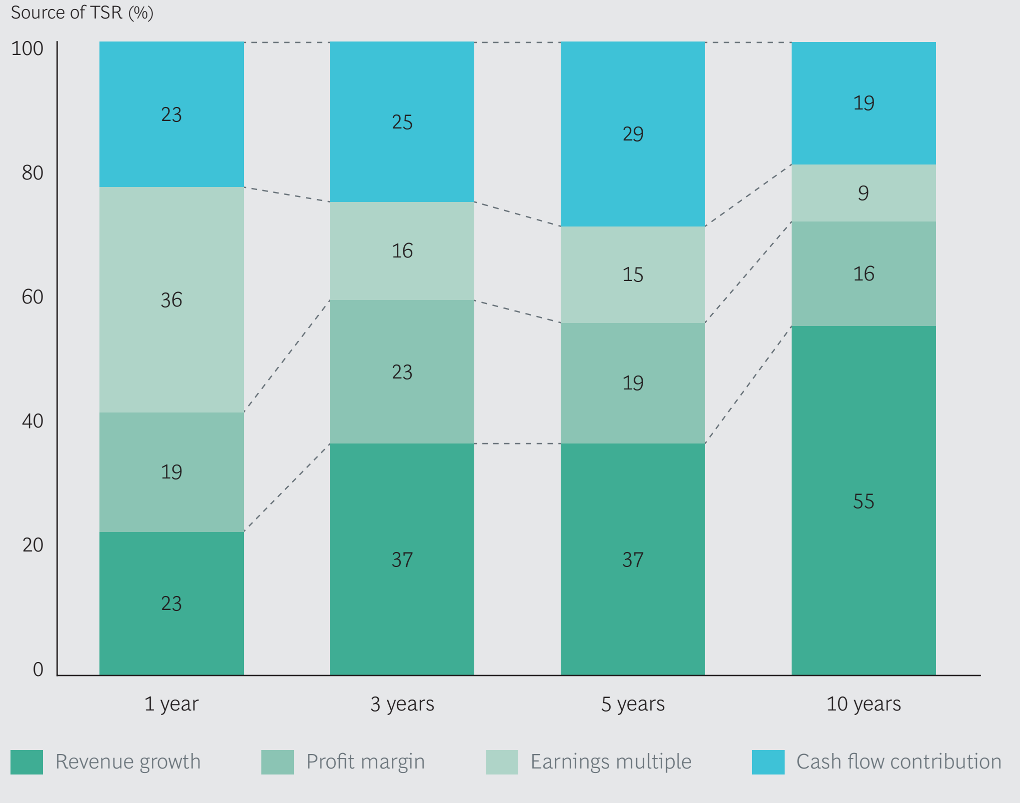
into the Finnish economy, according to a 2014 report in Finland's *Helsingin Sanomat* newspaper. This flow included the salaries and benefits Nokia paid to employees (€23 billion), the proceeds Finnish shareholders got from selling Nokia stock or receiving dividends (€36 billion), and the taxes Nokia paid out of its profits (€11 billion). Another €30 billion was related, in large part, to the money Nokia paid to suppliers—all of which rippled through the Finnish economy.

Nordic countries need to find ways to produce another generation of great companies—that is, companies that have an impact, influence, and customer base far beyond the tiny populations and small territories of their home countries. BCG's analysis shows that over long periods of time, revenue growth has been the single biggest reason for high total shareholder returns (TSRs) of companies listed on the stock exchanges of Denmark, Finland, Norway, and Sweden (see Exhibit 2). We call these high-performing companies sustained growers and believe there are roughly six dozen of them in the four Nordic countries (see sidebar, "Companies That Qualify as Sustained Nordic Growers").

Superficially, the sustained growers look very different from each other. There are industrial, energy, health care, and information technology companies. A plurality of them are in Sweden (the most populous of the Nordic countries), but there are also a dozen or more sustained growers in Denmark, Finland, and Norway. In size, they range from AB Volvo, the Swedish truck, engine, and heavy equipment manufacturer, with revenues of €34 billion, to Københavns Lufthavne A/S, a Danish airport services company, with revenues of €544 million.

But sustained Nordic growers are alike in some important ways. They tend to pay attention to margin management; to emphasize research and development; and to prefer small, tactical acquisitions over bet-the-company

Exhibit 2 | Revenue growth has had the biggest long-term impact on Nordic companies' shareholder returns



Source: S&P Capital IQ, BCG ValueScience Center, BCG analysis.
Note: Based on 206 companies in the Nordic DS Market Index, 1995–2015.

deals. Indeed, through our analysis, we've been able to build a framework that breaks down the components of corporate growth in these countries. We call this our transformation framework because it can be used to help companies understand how they measure up and where they might want to focus more attention.

COMPANIES THAT QUALIFY AS SUSTAINED NORDIC GROWERS

BCG's identification of sustained growth companies started with a list of 1,301 companies that are publicly held and have their headquarters in Denmark, Finland, Norway, or Sweden. Since younger or smaller companies have an advantage in terms of their growth trajectories, we only considered companies that have annual turnover of more than €500 million and that have been in business for more than ten years. One final requirement was that companies have growth rates above the average for their industries. That winnowing process led us to 73 sustained growers: 29 in Sweden, 17 in Norway, 15 in Finland, and 12 in Denmark.

A FRAMEWORK FOR SUSTAINED NORDIC-COMPANY GROWTH

Successful transformations must address three building blocks: funding the journey; winning in the medium term; and organizing for sustained performance (see Exhibit 3). The first element of **funding the journey** is preserving margins while growing. As a group, sustained Nordic growers have a six percentage-point EBITDA advantage over all other companies. Moreover, their margins have been inching up,

Exhibit 3 | Company growth framework

FUNDING THE JOURNEY	1 Preserving margins while growing
	2 Focusing on cash flow
WINNING IN THE MEDIUM TERM	3 Innovation, R&D, and digital
	4 International expansion
	5 Small, serial acquisitions
ORGANIZING FOR SUSTAINED PERFORMANCE	6 Growth-focused agile organization and culture

Source: BCG analysis.

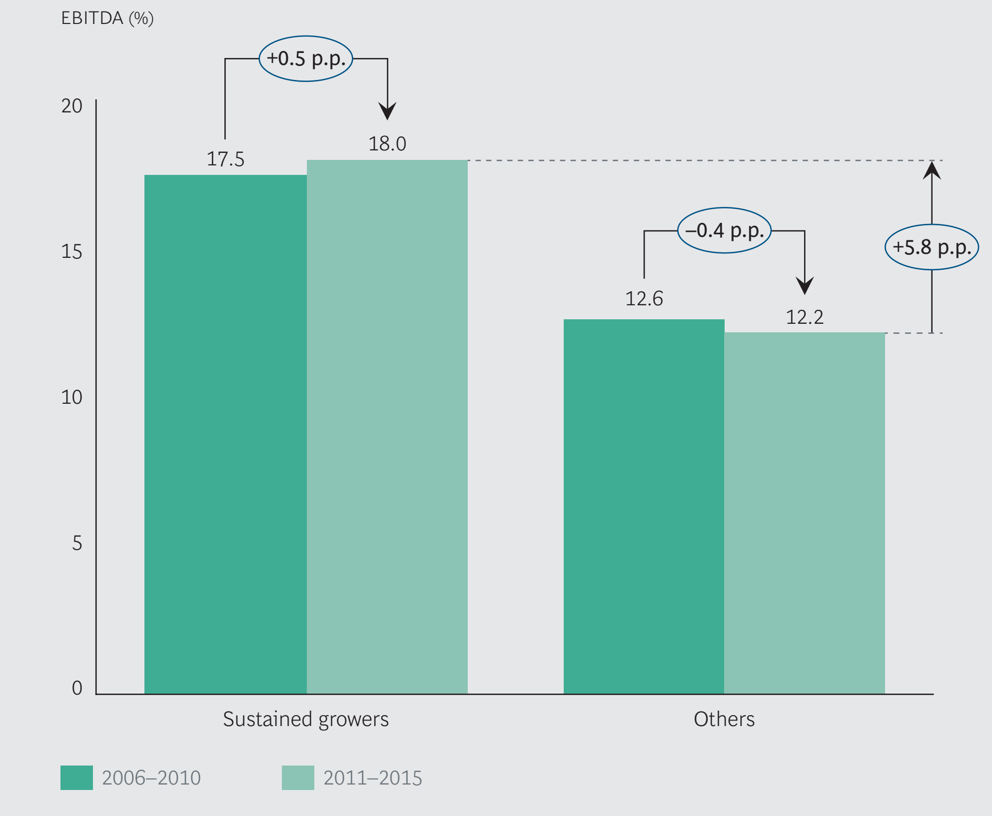
reaching an average of 18% between 2011 and 2015, while other Nordic companies' profitability has eroded (see Exhibit 4).

Of particular relevance, in the case of the sustained growers, is the fact that the margin expansion is not explained (or not explained entirely) by external factors, such as the sector a company is in. In some industries, certain Nordic companies' margins have fallen, while others' have risen—suggesting some companies have done a better job of maneuvering into positions where they're less vulnerable to competition. This is true of the Danish pharmaceutical giant Novo Nordisk, with its leading position in diabetes medicines, and of the Danish medical device maker GN Store Nord with its focus on hearing aids.

Focusing on cash flow is the second element of sustained growth in the Nordics. In the most recent five-year period, the average free-cash-flow yield of sustained growers rose by a factor of 2.5, while non-sustained growers' cash flow declined. It's difficult for growing companies to increase their cash flow, and many companies can't manage it. Asset-heavy companies in particular often have to choose between growth and cash flow, as is made clear by the recent activities of the Finnish consumer goods company Fiskars (with its Polish factory extension), the Swedish clothing retailer H&M (with its opening of new stores in expensive locations like New York) and Norwegian Air Shuttle (with its purchases of new aircraft in order to begin flying new routes). Companies whose source of value is rooted in the services they offer, rather than in some new asset that requires a major capital outlay, have a better chance of increasing their revenues and cash flow simultaneously. An example is Ramirent, of Finland, which is expanding its traditional hardware-based rental business with services such as project planning and site services for building contractors.

The second overarching category in the transformation framework is **winning in the medium term.** Innovation, R&D, and

Exhibit 4 | Sustained growers have a sizable advantage in profitability



Source: Thomson Reuters Datastream, BCG analysis, Helsingin Sanomat.
Note: Analysis excludes banks and insurance companies.

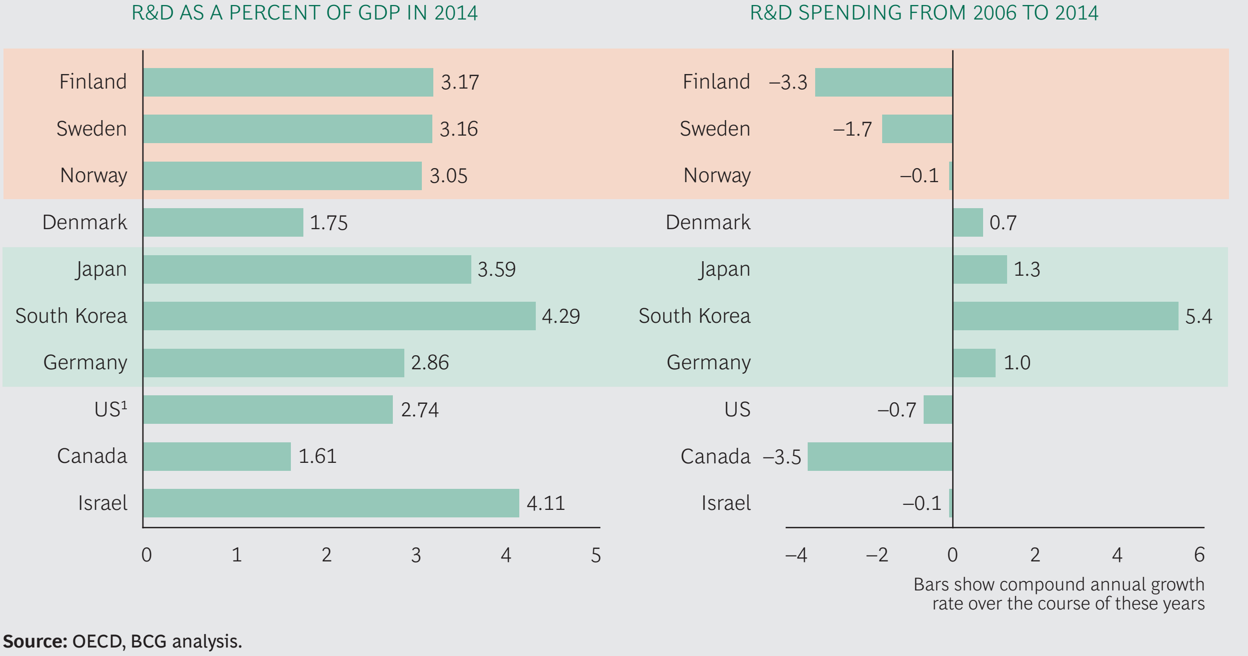
digitization is the first element of this. Let's start with the positive news: Nordic countries have maintained their reputations as innovation leaders, with Sweden, Finland, and Denmark regularly appearing in the top ten of the Global Innovation Index[1]. And the Nordic companies that experience sustained growth invest fairly heavily in R&D. This is true even of some sustained growth companies in low-tech industries, such as Fiskars, with its emphasis on consumer-focused product development, and the Norwegian seafood company Marine Harvest, which has used R&D to figure out ways to control aquatic lice (a continual threat to salmon farms). From 2010 to 2015, the sustained growers identified by BCG increased their annual R&D spending by almost 8%.

Nordic companies that aren't sustained growers have been cutting their R&D spending, which to some extent is understandable. Companies that are losing sales or market share (as some Nordic companies are) have to find a way to lower their costs. R&D, however, is a wellspring of future profits. That makes it a risky target of cuts.

As much as it is an individual company problem, declining R&D spending is also a macro-level problem. R&D spending in the Nordics is still relatively high. For instance, it's generally higher than in Germany, a country that has improved its standing in the Global Innovation Index for three years running. But where Germany has been increasing its R&D spending, most Nordic countries have reined theirs in (see Exhibit 5). In addition, in the last decade, the number of international patent applications coming out of Nordic countries has fallen, on a per capita basis, while per capita patent applications from other OECD countries (including Germany, the US, and South Korea) have risen.

Another area in which Nordic companies appear to be behind is in their use of corporate venture capital. Corporate venture capital can create significant value if companies take a portfolio approach–making multiple bets—and if they treat their internal venture capital efforts as something separate from their other operations and investments. However, it is an open question whether many Nordic companies adhere to these practices; most of them don't yet have corporate venture capital arms. For instance, in Sweden—the most advanced Nordic country in its use of corporate venture capital--only about one in every five large companies has a discrete venture capi-

Exhibit 5 | Nordic countries are focusing less on R&D than other OECD countries



Source: OECD, BCG analysis.
[1]US data is from 2013 (most recent available).

tal unit. By comparison, among the 500 biggest companies in the world, roughly twice that number (two in five) allocate funds to corporate venture capital.

Judging by their public communications, Nordic companies are also not making digital initiatives a core part of their agendas. A review by BCG shows that only about a third of Nordic CEOs even mentioned digitization in the last shareholder letters they wrote (see Exhibit 6). The idea of a gap in digital readiness was reinforced by a 2016 BCG survey in which only half of all board members in the Nordics said they had the skills to help their companies figure out their digital future. That was well below the 81% who said their companies would be "deeply affected" by digitization.

The lack of readiness for digital operation is also evident in the absence of overarching digital strategies at most Nordic companies. It often isn't clear which executive or department is responsible for a company's digital agenda.

International expansion is the second element of ensuring medium-term growth. Because of the small size of the home markets, the importance of geographic expansion is obvious. A company in Sweden (population 9.6 million) is going to be hard-pressed to grow beyond a certain size if its customer base is entirely within its own borders. The same is true of companies in Denmark, Finland, and Norway (populations of 5.6 million, 5.5 million, and 5.1 million, respectively). Yet despite the limited opportunities for growth at home, there often isn't a hunger for any kind of expansion, let alone for expanding into other countries. There would not be anything unusual about a web design firm in Helsinki or a clean-tech startup in Copenhagen limiting its activities to a 200-mile radius,

EXHIBIT 6 | Digitization not a priority for Nordic companies

ONLY A THIRD OF FIRMS EVEN MENTION DIGITIZATION IN THEIR CEO LETTERS

EVEN THOSE FIRMS THAT MENTION DIGITIZATION OFTEN ADDRESS IT ONLY CURSORILY

Source: Company annual reports, BCG analysis.
Note: Based on text analysis of CEO (or board of director) letters in most recent annual reports of 123 Nordic companies.
[1]Includes related variations such as "digital," "digitalization," and "digitized."

and resisting suggestions that it increase its staff beyond five or six people.

Here too, in their global view, the sustained-growth Nordic companies differentiate themselves and lead the way. On average, sustained growers increase their foreign sales at a rate of 10.5% annually—roughly five times the rate of other Nordic companies. Companies like Kone, the Finnish elevator manufacturer, and Securitas, the Swedish provider of security services, have substantial businesses in Asia and the Americas. The Norwegian construction company Veidekke hasn't gone as far afield, but it hasn't stayed at home, either; it is now getting 28% of its revenues from projects in Sweden (including the construction of a huge new office complex in Stockholm) and 7% of its revenues from projects in Denmark. In addition to neighboring countries, Nordic companies can also expand into other nearby regions such as the Baltics.

The Nordics' top growers are export-focused and take a strategic approach to M&A.

Another way of pursuing growth is through small, highly focused, serial acquisitions. Global data suggest that serial acquirers (defined as companies with at least three acquisitions over a three-year period) get higher returns on their acquisitions than do one-time acquirers. There are a few reasons for this. One is simply that the smaller deal sizes (inevitable for companies doing one-plus deal a year for multiple years) means less risk. Another is that there is usually less to integrate, allowing the post-merger integration phase to go more smoothly. A third reason has to do with the particular sort of discipline and company culture required to make relatively small, repeated acquisitions. The only way companies feel comfortable undertaking such acquisitions is if they have enough market knowledge to understand how an asset that is small and possibly not on other companies' radars (often a technology firm or an asset providing entry to a new geography) can make a big difference. In a sense, there's a barrier to entry—in terms of M&A success—that grows with every small deal companies make, and that is seen in the lead-generation, due diligence, and integration processes that serial acquirers use.

The Nordic's sustained growers already tend toward the lower-risk approach of serial acquisitions. For every €10 that other Nordic companies have spent on acquisitions in recent years, sustained growers have spent about €5.5. Serial acquisitions have allowed Securitas to expand its geographic footprint around the world and the Swedish sensor company Hexagon to enter new industry sectors (see sidebar, "From Locksmith to Exemplar of Nordic Growth," for details on another serial acquirer, Assa Abloy).

Occasionally, Nordic companies do larger, transformative deals that make sense given their special circumstances. This is true of two megadeals in the last decade: the €30 billion acquisition of Norsk Hydro's energy business by Norway's Statoil, and the €13 billion acquisition of Alcatel-Lucent by the reconstituted Nokia. Though much bigger than the average M&A transaction in the Nordics, both deals were well-conceived in that they gave the acquiring company a significantly larger share of a market it considered crucial.

The third major category in our transformation framework relates to **organizing for sustained performance**. The main element here is creating a growth-focused agile organization and culture. This starts with executive teams, and specifically, with CEOs who care about growth. The focus of these CEOs is obvious if you look at where in the company they spend their time, the initiatives they approve, their conversations with employees, and their communications with shareholders. It's also often obvious in the aggressive way they pursue talent and support hiring.

We see these qualities in the CEOs of successful Nordic companies. They mention growth more often in their annual reports than do other Nordic CEOs, and are about three times more likely than other CEOs to have increased their companies' headcounts in the last five years.

FROM LOCKSMITH TO EXEMPLAR OF NORDIC GROWTH

None of the 73 sustained Nordic growers exhibits all six components of growth, but **Assa Abloy** comes close.

Twenty-two years after its founding as a lock manufacturer, this Swedish company has jumped to a leading position in digital door-opening solutions. The world's doors (whether at private residences or in commercial or public properties) are no longer only wood and hardware; there is more and more entrance automation, software-enabled security, and electromechanical technology in place. Assa Abloy is in the vanguard on this, having poured almost €200 million into R&D in 2015, a greater than threefold increase from 2005.

Assa Abloy has also used serial acquisitions to its advantage. The company has made more than 200 acquisitions since its founding, including many to enable its expansion into emerging markets. About 17% of the company's revenues now come from Asia, and the company has also used acquisitions to gain a toehold in South America. North America is Assa Abloy's biggest market, accounting for 39% of its revenues, followed by Europe at 37%.

Thanks to all of these steps (and to a focus on cost-efficiency that includes lean techniques and the offloading of component production to plants in low-cost countries), Assa Abloy has grown its revenue base by about 19 times since 1994 (it reported revenues equivalent to about €7.1 billion in 2015). The growth, along with a nearly unbroken rise in profits, has given the company one of the highest total shareholder returns (TSRs) in the Nordics.

Organizational agility is apparent in several things companies do. One is the approach companies take to strategy development. Most companies do the bulk of their strategic planning in a compressed three- or four-month period, squeezing in strategy discussions alongside other aspects of the annual plan. A more agile company usually has mechanisms that separate strategy development from bureaucratic process, so that strategic discussions (and the resourcing decisions that grow out of them) can take place in a more dynamic way, during the annual budgeting season or in the run-up to the Christmas holidays—that is, whenever they're needed.

Agility also requires a certain amount of in-house digital expertise, given the pervasiveness of digital technologies.

Finally, non-traditional organizational structures can also contribute to agility. Spotify is a good example. This Swedish company, which is private and not included on our list of 73 sustained growers, uses autonomous squads—teams of up to eight people—to do rapid product development and keep the company relevant in the fast-changing global market for online music streaming. Being willing to experiment with organizational structures and operating models is an approach that more Nordic companies may want to consider, especially if it allows them to create something of commercial value or get to market faster.

NOTE

1. The Global Innovation index is put together annually by INSEAD, Cornell University, and the World Intellectual Property Organization.

RETHINKING THE MACROECONOMIC ENVIRONMENT

If Nordic countries expect to continue to get a lift from homegrown multinational companies, they will have to make it easier for such companies to germinate and flourish. The issue is not that Nordic countries aren't business-friendly; they are. These countries have long had some of the world's best regulatory environments for entrepreneurs and some of the lowest barriers to trade and investment. The last three OECD analyses of these factors—in 2003, 2008, and 2013—show the Nordics with the same or improving levels of performance. That's all good. The problem is that other countries are progressing much faster and closing the gap. For instance, over the same ten-year period—2003 to 2013—Slovakia went from having some of the highest barriers to business creation (in terms of required number of steps and permissions) to some of the lowest. Other countries that have gotten rid of bureaucracy and become significantly more business-friendly include Lithuania, Malaysia, Singapore, and Taiwan.

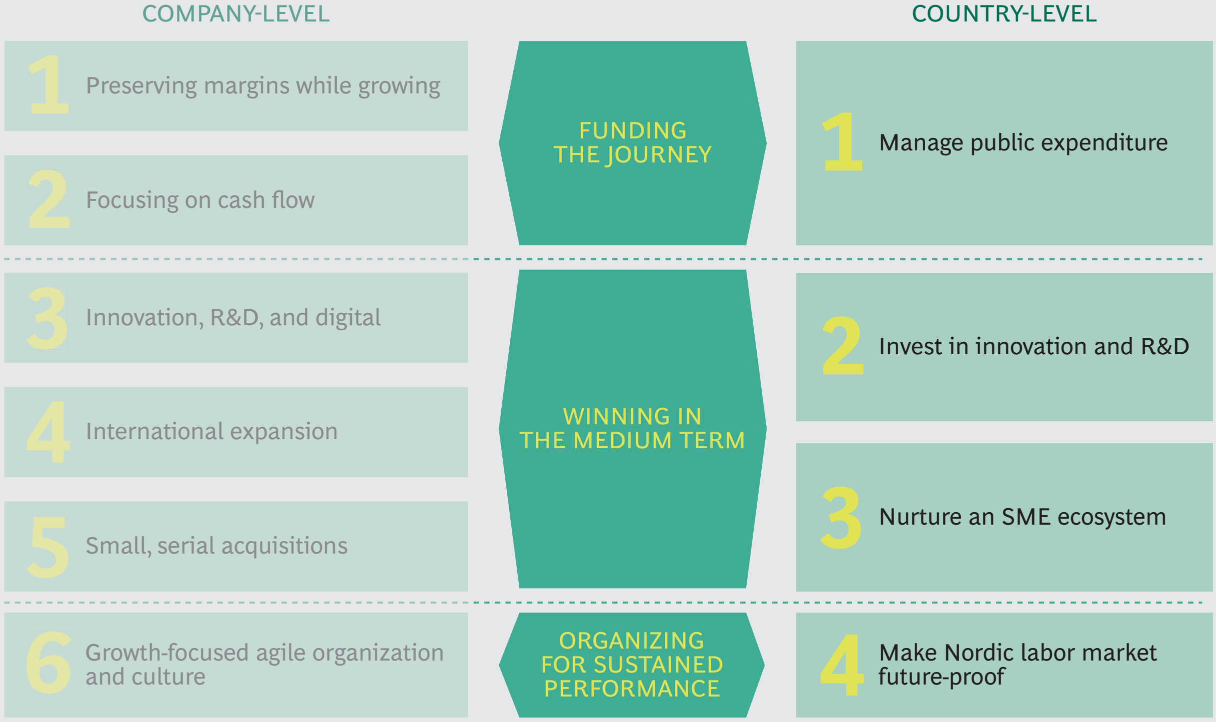
The emergence of other countries as powerful trade and business rivals has left Nordic countries with what might be called a "Red Queen" effect. The Red Queen effect (named for a character in Lewis Carroll's *Through the Looking Glass* who tells the protagonist that she is in a place where one must keep running just to stay in the same place) maintains that organisms must constantly adapt to survive. It is an apt metaphor for the challenge that Nordic countries face as they look to advance in a world that is transforming around them.

The areas to which governments should pay attention run parallel to the priorities of big companies (see Exhibit 7). Nordic governments must remove a number of barriers and lay some new foundations if their homegrown companies are to buck mortality trends and have a chance of becoming (or remaining) important on the regional or global stage

There comes a time when every successful country must adapt or fall behind.

The first thing Nordic governments have to do is manage their public expenditures and balance their budgets. In 2015, Finland, Denmark, Sweden, and Norway all were at the top of the OECD in terms of public spending as a percentage of GDP. All but Norway have operated at deficits since 2008. The austerity programs those countries have put in place (such as Finland slashing municipal budgets and Denmark capping unemployment benefits at two years rather than four) have kept the deficits from worsening, but have also

Exhibit 7 | Actions Nordic countries must take to help their economies grow



Source: BCG analysis.

made it politically more difficult for them to support promising commercial initiatives or participate in public-private partnerships.

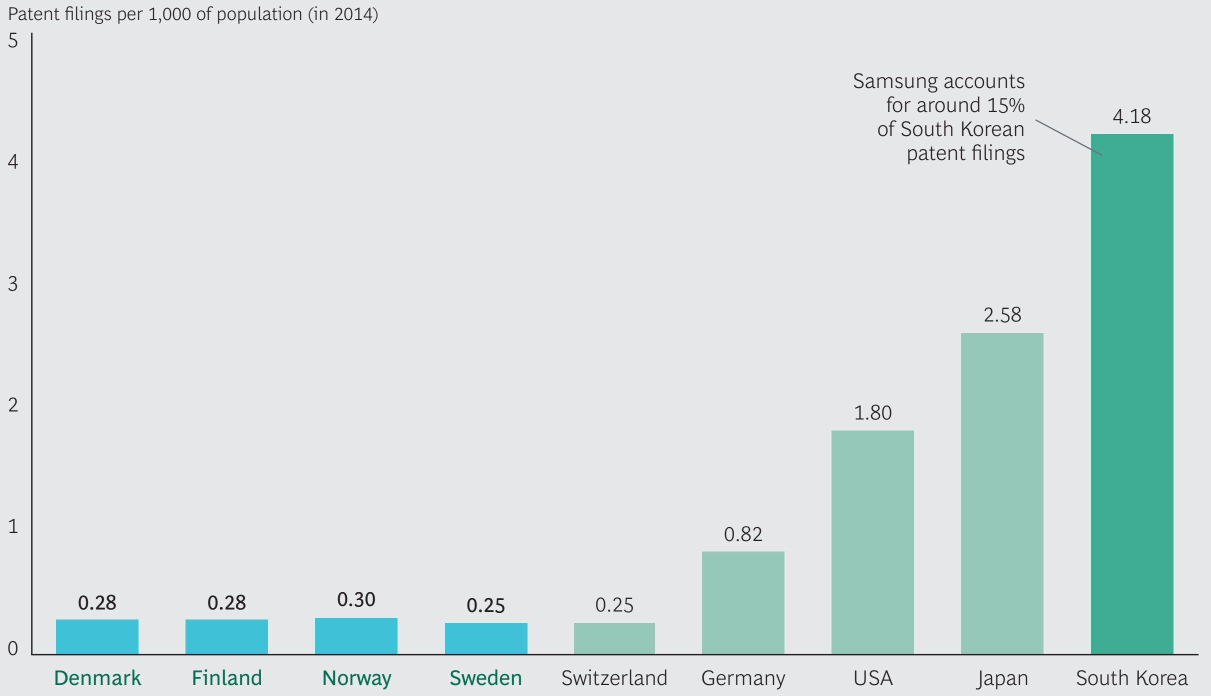
As it is for Nordic companies, one of the immediate priorities for Nordic countries must be innovation and R&D. As noted earlier, the countries' statistical lead in R&D has slipped or disappeared—other countries have pushed ahead in terms of the percentage of GDP that they plow back into R&D.

South Korea shows how a country can use financial resources to jump ahead in innovation and position itself to capitalize on future growth areas. This nation of 50 million people has been increasing its R&D spending more quickly than any other OECD country, and its technologically advanced workforce now generates patents at a prodigious rate (see Exhibit 8). A number of tactics have allowed South Korea to get to this leading position. Among them: the use of tax credits to support market-disrupting innovation in high-tech areas; the development of a long-term (2025) vision for science and technology that includes funding for two dozen "core" technologies; and pushing post-secondary students toward STEM (science, technology, engineering, and math) degrees. South Korea also looks for ways to commercialize its advanced research, including through the use of public-private innovation partnerships.

There are two basic approaches that South Korea uses to encourage innovation—and they would work in Nordic countries as well. The first is to treat R&D as a long-term commitment—whether by funding basic research directly or indirectly, through tax breaks. The second is a commitment to commercialization. In the Nordics, commercialization of R&D is a notable weakness. Nordic countries need better mechanisms for turning their great ideas into salable products. More university-company partnerships and speedier resolutions of intellectual property disputes could help in this regard.

The other medium-term priority for Nordic countries should be to nurture an ecosystem of small and medium-sized enterprises (SMEs). In the context of what Nordic countries are trying to accomplish—make sus-

Exhibit 8 | South Korea's innovation is evident in its patent filings



Source: CNRS (a unit in France's Ministry of Education and Research), Bloomberg, Global Innovation Index, the Atlantic, Businesskorea, OECD, BCG Analysis.

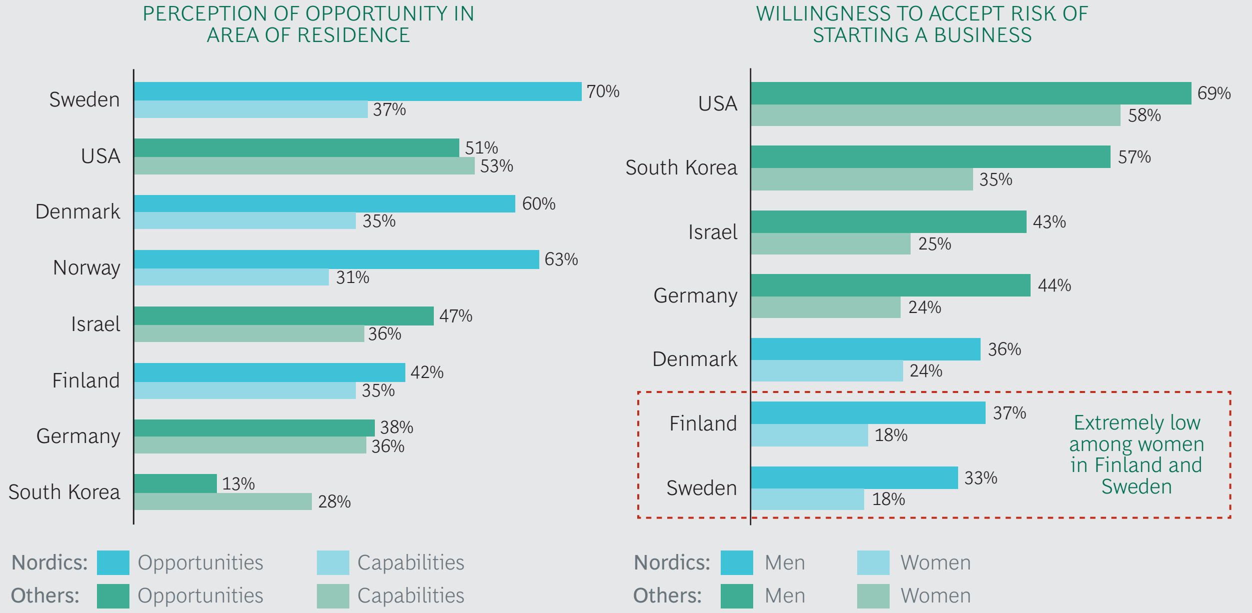
tained growth companies, and multinational companies in particular, centerpieces of their continued economic rise--SMEs serve a couple of purposes. First, the small Nordic businesses that are founded today (or that develop a significant growth trajectory) could become multinational corporations (MNCs) in the future, adding to the tax base and creating jobs and wealth on a huge scale. It is hard to overstate the importance of this. Big-company formation in the Nordics has slowed dramatically in the last 20 years. BCG's analysis shows that none of Finland's biggest companies was founded after 1995, and fewer than one in ten of Denmark's were. Norway and Sweden have done a better job of creating significant new businesses, but no Nordic country can touch Canada, South Korea, or the U.K. in this regard. Forty percent of the biggest Canadian companies, 23% of the biggest South Korean companies, and 21% of the biggest U.K. companies were founded in the last 20 years. That demonstrates a lot of what might be called business fertility.

Even when SMEs don't remain independent—when they don't grow into large companies of their own—they can have a significant positive impact because of the ideas and expertise they contain. These young companies offer a sort of ready-made innovation that can be valuable to existing MNCs through M&A.

A challenge for Nordic countries is fostering the entrepreneurial spirit that prompts people to start businesses in the first place. Opportunity is not the problem; more than three in five Swedes, Norwegians, and Danes say there are good opportunities to start businesses in the areas where they live. (This is well above the proportion of Americans who say this, though people in the US tend to be more accepting of risk.) In the Nordics, the downside of entrepreneurship looms large, and notwithstanding some highly visible exceptions (including Stockholm's lively tech scene and the online gaming companies in Finland), many people are reluctant to "take a flyer." As a result, there is less startup action in these countries than might be expected (see Exhibit 9).

To some extent, the hesitation to become an entrepreneur in Nordic countries grows out

EXHIBIT 9 | Nordic people have a mixed attitude toward entrepreneurship



Source: OECD survey of people aged 18 to 54, BCG Analysis.
Respondents were asked whether they agreed with three statements:
1) "I see good opportunities to start a business in the area where I live"
2) "I believe I have the required skills and knowledge to start a business"
3) "I would rather take a risk and build my own business than work for someone else"

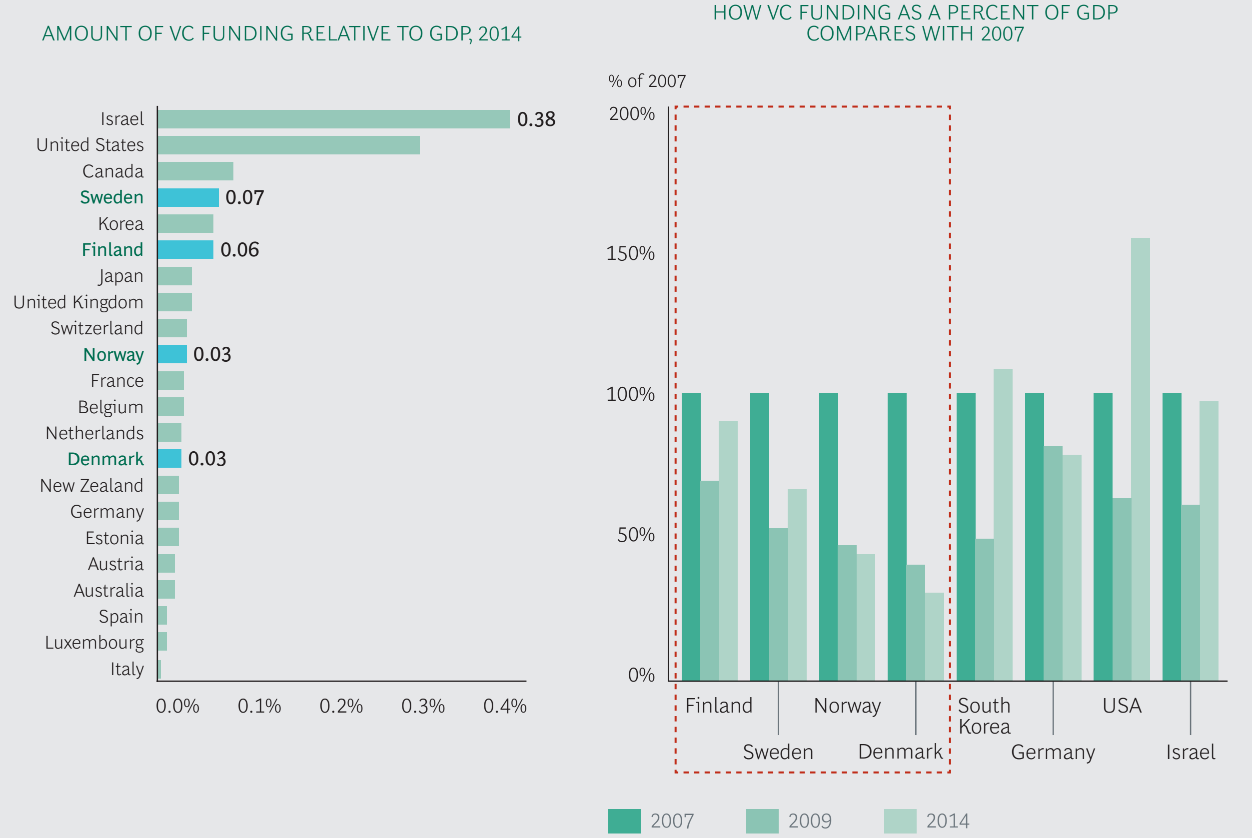
of the countries' policies and cultures. In Finland and Sweden, for instance, generous unemployment benefits can be a disincentive. After all, if a new business failed, it would leave the founder with a lower recent record of income, and smaller unemployment checks, than if that person had not taken the risk. (The same calculation can keep a talented engineer or biochemical researcher from leaving a high-paying job at a Finnish or Swedish multinational to start his own business—if the business fails, the person's unemployment insurance is based on his startup salary, not on the bigger salary he was previously making.)

In addition to the "benefit trap," in the Nordics there is still a certain amount of pressure to blend in. Things have evolved since the 1930s, when a book by Aksel Sandemose gave a name to the disapproving attitude in Scandinavia toward those who exhibit too much individuality or too great a desire for personal success. But a form of The Law of Jante (or *Janteloven*, as Sandemose called it) still lingers in the Nordic psyche, and probably keeps some talented people from summoning up the nerve to strike out on their own.

Another challenge that Nordic countries have in encouraging entrepreneurship and the development of SME ecosystems is the low and declining influence of venture capital (see Exhibit 10). We have already noted the lack of corporate venture capital in the Nordics and talked about the missed opportunity this represents in the companies' internal R&D efforts. The paucity of external venture capital is a separate issue that may limit these countries' commercial firepower. Venture capital firms are usually enthusiastic backers of digital startups—if venture funds don't exist or are too small to have an impact, it generally means fewer technology companies are being formed. And that can mean less wealth creation, fewer new jobs, and lower international stature.

Answering the call. Many of the Nordics' medium-term challenges can be addressed through policy changes. A restructuring of the social safety net, so that founders and early employees don't pay too steep a price for a startup that doesn't succeed, could remove some of the hesitation to form new businesses, as could more flexible tax policies in the traditionally high-tax Nordics. After all, it's

EXHIBIT 10 | Venture capital's role in Nordic economies is small and has diminished



Source: OECD, BCG Analysis.

not as though taxes are never used in these countries to encourage economic activity. Norway uses taxes to spur R&D in oil and gas, its biggest industry. It might make sense for it and other Nordic countries to permit the use of incentive stock options, which are taxed at a lower rate than the ones used for ordinary income. In the US, incentive stock options have been instrumental in persuading thousands of talented workers to join start-ups, supplying young technology companies with skills that proved crucial to their success.

Nordic countries could also double down on their efforts to eliminate the red tape surrounding business formation. In many ways relating to processes, these countries are already friendly toward new businesses, as mentioned earlier. However, obstacles remain. For instance, some Nordic countries insist that the paperwork needed for incorporation be filled out in the local language. If this restriction were lifted and business founders could use English (a language far more foreigners are likely to write and speak than any of the Nordic languages), it would also make it possible for Nordic countries to experiment with "start-up visas" (as the U.K. and Ireland have done) as a way of attracting more entrepreneurs.

Another challenge that may be addressable through policy is the tendency of Nordic SMEs to remain strictly local businesses. The reluctance to expand is evident in the fact that the biggest 100 companies in Finland and Sweden account for 67% and 58%, respectively, of those countries' exports. In Germany, by contrast, the biggest 100 companies account for only 38% of all exports, and the country's vibrant *Mittelstand* tier of SMEs has a large share of exports.

Many countries appoint special councils to help their SMEs expand internationally. Austrade, which is a unit of Australia's Ministry of Trade, Tourism and Investment, offers a variety of services to small and medium-sized exporters, including briefings on what they can expect in international markets, referrals to legal and tax firms that understand the intricacies of overseas commerce, and potential partner and customer identification. The Nordics have their own trade forums (Team Finland is an example), but there is room for them to play a bigger role.

The Law of Jante is trickier; there is no policy that can bring about an overnight change in a longstanding cultural attitude. But political leaders can help by acknowledging the contributions made by entrepreneurs and by promoting the benefits of an economy that continually reinvents itself.

Attracting more venture capital. At the funding level, Nordic countries could take steps to encourage the creation of a venture capital industry. This is something that Israel did in the early 1990s when it established a state-owned venture capital fund called "Yozma" and persuaded international venture capitalists to invest in the country by matching a portion of the funds the venture firms raised privately. Within five years, Israel's venture capital industry was overwhelmingly private and was very successful, and since then, Israel-based venture capitalists have been instrumental in fueling hundreds of life science, software, and Internet service companies. Israel has some similarities to the Nordic countries (including a relatively small, but highly educated, population), and it stands to reason that a Yozma-like model for expanding venture capital could work in Nordic countries as well.

Finally, and perhaps most importantly, if individual Nordic countries are to lay a foundation for their SMEs to grow, they are going to have to make some bold moves in the area of digitization. This includes investments that the private sector hasn't yet made—for instance, in high speed Internet service outside of cities or in digital interfaces for administrative public services. It may also include incentivizing local companies to adopt online processes, and entering into partnerships with other Nordic countries to promote the region's potential as a digital hub and talent magnet.

Some leading technology MNCs, such as Google and Facebook, already maintain sizable data centers in Nordic countries, drawn in part by the cool climate. However, more could be done, from an employment perspective, to capitalize on the presence of these leading technology companies. And on a policy level, many Nordic countries may want to take a fresh look at regulations that have slowed the arrival of new digitally centered business models. The unaccommodating regulations include prohibitions against Uber in all four Nordic countries, and minimum wage laws for delivery workers that have kept food-ordering apps from getting off the ground (see sidebar: "Digitization as a €100 Billion Opportunity? Here's How it Could Happen").

> Nordic resistance to digital can be seen in the legal challenges Uber has faced in all four countries.

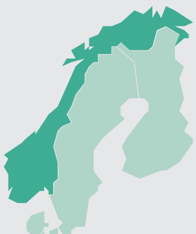
Future-proofing the labor market. One of the most complicated challenges facing the Nordic countries as they try to create a foundation in which homegrown multinationals can take root and continue to thrive relates to workforce planning. We think of this as future-proofing the labor markets in the Nordics. As the economic policymakers in these countries know, there are large-scale talent gaps and skill shortages on the horizon, mostly due to digital disruption.

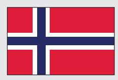
BCG forecasts that by 2025, Denmark, Finland, Norway, and Sweden, together, will need to find the equivalent of roughly 2 million more full-time workers (see Exhibit 11). Some of these workers will be in explicitly digital fields—big data analytics, cloud services, advanced robotics. But even the new workers in more traditional fields—hospitality, transportation, food services—will need skills suited to an increasingly digital age. One big benefit of these new workers is that they will help stabilize the countries' falling worker-to-retiree ratios, generating income tax receipts that can be used to fund a variety of public programs.

These countries' multiple goals—of maintaining global competitiveness, continuing to pro-

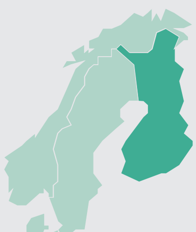
DIGITIZATION AS A €100 BILLION OPPORTUNITY? HERE'S HOW IT COULD HAPPEN

Venture capital and flexible regulations will trigger growth in the region.

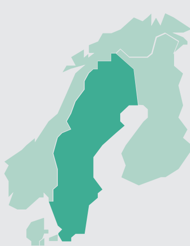




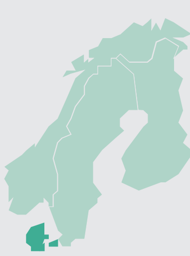
POTENTIAL: €24.3 BILLION
With its extensive digital infrastructure, **Norway** is in an excellent position to capitalize on this opportunity. The government needs to put more of its services online, remove roadblocks to entrepreneurial activity, and make it easier for venture capitalists to earn a profit.



POTENTIAL: €11.3 BILLION
Finland was once a leader in digitization, but in recent years has fallen back. The country needs to remove regulations that are preventing new business models from forming, and must do more to support entrepreneurship. One bright spot: Finland's online gaming startups.



POTENTIAL: €35.5 BILLION
Sweden has produced several blockbuster successes and there is still a lot of buzz surrounding the startup scene in Stockholm. The upside is considerable. By rethinking its regulations and investing in the country's digital infrastructure, Sweden may provide the boost its highly innovative workforce needs.

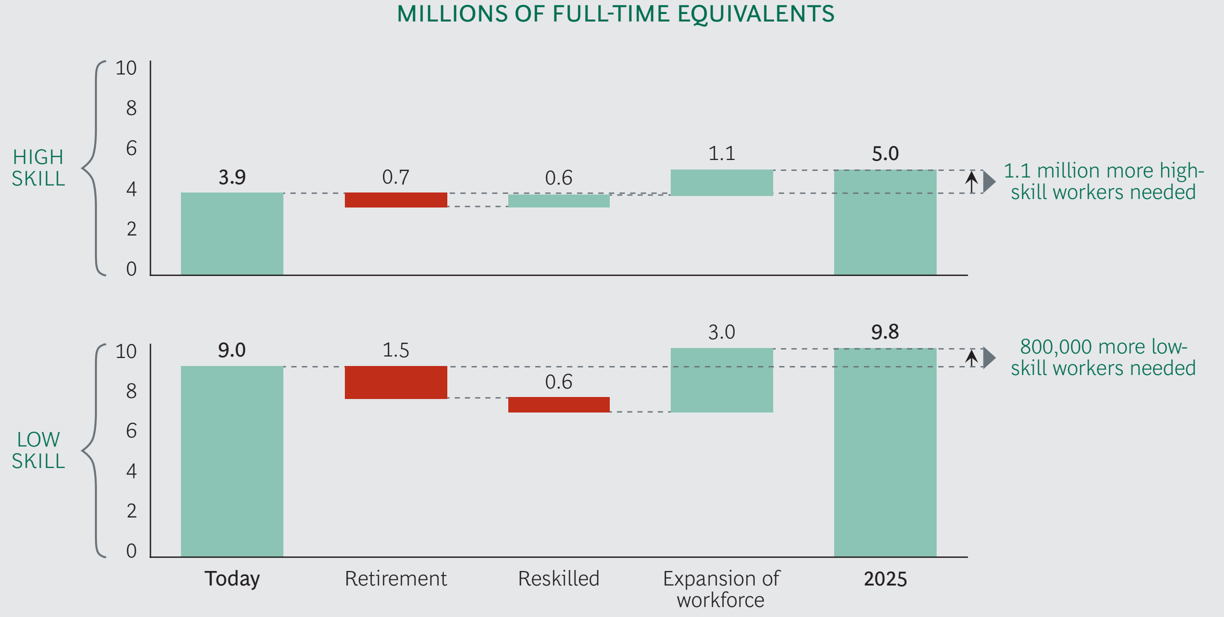


POTENTIAL: €26.6 BILLION
Denmark has a digitization agenda that it has been pushing aggressively. If it finds ways to get investment funds to the SMEs that need them, the country could burst beyond trading and service to emerge as an important digital force in the future.

vide unparalleled benefits to their citizens, avoiding talent shortages, and minimizing social problems—create enormous challenges. Both the domestic workforce and the immigrant workforce must be part of the answer.

Changing the formula. The domestic workforce can be expanded through policy adjustments. People in the Nordics start working later than in other developed economies (often after lengthy university educations), and they retire

EXHIBIT 11 | How Nordic countries' labor markets will evolve by 2025



Source: OECD, Statistics Sweden, Statistics Norway, Statistics Denmark, Statistics Finland, BCG analysis.
Note: Bars labeled "Today" reflect year-end 2015 data.

earlier. Although 65 is the official retirement age in both Denmark and Finland, the average Finnish man is retired by the time he is 61.9 and the average Danish woman by the time she is 60. Both the university students in their mid- to late-20s and the people in their fifties and sixties who have retired but are still capable of working, are sources of untapped labor. The amount of time that students are given to graduate before they lose their subsidies could be shortened, forcing them to seek employment sooner. And there are steps that could persuade valuable older workers to stay on the job longer. The Swedish manufacturer Assa Abloy offers extra vacation and healthy lifestyle benefits as part of a program called Age Master, which has helped lift the company's average retirement age from 59 and a half to 63.

Another priority for the domestic workforce is retraining. Across the Nordics, as many as 600,000 jobs are likely to become obsolete between now and 2025 because of digital technologies. Industries such as health care and retail will undergo some of the most dramatic changes. But this doesn't consign every affected worker to the unemployment rolls. Many workers can be retrained, perhaps by industry skills councils that get a portion of their funding from the government, or through tax credits given to companies that retrain, rather than lay off, staff.

Immigration's role. The other talent group that is going to be critical in the coming decade is immigrants. In years past, immigration into the Nordics was allowed mostly on humanitarian and family-reunification grounds and was not driven by strategic economic concerns. That is changing. By BCG's calculation, in the next ten years, Nordic countries will have to integrate about 650,000 low-skill immigrants and 200,000 high-skill immigrants into their workforces.

With the low-skill immigrant population, the challenges will revolve around successfully attracting them to the countries and then giving them the skills they need to succeed in the jobs that are available. Australia and the Netherlands have both poured money into on-the-job training for low-skill immigrants. In Sweden, the construction company Skanska AB (which has committed to hiring asylum seekers) is doing something similar. With low-skill immigrants, there also must be effective policies for social integration.

A different approach is needed with high-skill immigrant workers. The steps that Nordic countries can take to attract this group include offering special visas for high-talent foreign nationals; offering scholarships for immigrants willing to remain after receiving post-graduate degrees; reducing language requirements; and creating-on-the job immersion programs for immigrants who have graduated and are trying to break into their fields of expertise. In Canada, one such program, with a 50% subsidy from the government and using six-month internships, has had great initial success; 72% of participants have been offered full-time employment.

THE FIRST STEPS TOWARD CHANGE

WHERE TO BEGIN? Some answers to this question apply to all four countries: managing public-sector expenditures, pouring resources into innovation and R&D, developing digital capabilities, and doing more to support SMEs (including helping them expand internationally). A fifth, future, imperative is increasing the size, and upgrading the skills, of Nordic labor bases.

Beyond these universals, the where-to-begin decision will depend on each country's unique circumstances. Sweden, with its rich history of innovative startups (Ikea long ago, Skype and Spotify more recently), may want to focus on its looming workforce gaps. Denmark, with its heavy reliance on shipping and trading, may want to develop a brand-new capability in product innovation. Norway's overreliance on energy may be a reason for it to turn the bulk of its efforts toward SME creation, in the hope of finding some dynamic new areas that can help it diversify. For Finland, the difficulties it has had in recent years in producing significant new MNCs may prompt it to make bets on a handful of new industries, shore up its technological infrastructure, and do everything it can (including attracting more venture capital) to help its most promising startups get off the ground and operate internationally.

As the Nordic countries pursue their own individual agendas, there may be steps they can take together, whether through pooling R&D resources or through joint marketing to attract the high-skill immigrants they all will need. These countries haven't done a lot of economic partnering in recent years, but then they haven't had to. In the future, it will make more sense to work together.

If nothing else, the next few years will be a time to try new things. The Nordic countries that don't may find that they are falling further and further behind, exactly as Lewis Carroll knew would happen to those who stay rooted.

NOTE TO THE READER

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