

Analysis of future growth conditions and potentials in Greater Copenhagen

Prepared for the Danish Ministry of Industry, Business and Financial
Affairs, Region Hovedstaden and Region Sjælland

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About this report

This report takes a long-term view on the potential impact of global megatrends on a range of industries of particular interest in Greater Copenhagen

ABOUT THIS REPORT

This report has been prepared by Monitor Deloitte for the Danish Ministry of Industry, Business & Financial Affairs, Region Hovedstaden (the Capital Region), and Region Sjælland (the Zealand Region). The outset of this report is based on global megatrends and how they may be expected to impact a range of industries on a timeline looking towards ~2030. Hence, the analyses focus on the industry level with the purpose of identifying structural changes and market dynamics driven by the global megatrends, and uncovering what the potential opportunities and threats will be for the given industry. These analyses, complemented by insights collected through interviews with multiple subject matter experts from the Monitor Deloitte network and stakeholders in Greater Copenhagen (GC)*, provide input to the regional strategic planning in GC (which in this report is treated as the geographical area of Eastern Denmark, i.e. excluding the Skåne county), as they set the direction and frame for which strategic themes are central to meeting the global megatrends and creating the optimal conditions for a competitive GC.

HOW TO READ THIS REPORT

The sections in this report move dynamically between different altitudes, reflecting the complex nature of analysing the future implications of megatrends across multiple industries and geographical areas (global vs GC vs two distinct regions in GC), and distil strategic recommendations for different yet interrelated public entities. The structure of the report is as follows:

- Section 1:** The report starts by identifying global megatrends expected to impact industry and market structures towards 2030. These megatrends have been identified in concert with Monitor Deloitte's global centre of excellence for future research, Center for the Long View.
- Section 2:** The report then zooms in on six selected industries: Life Sciences, Financial Services, Transport & Logistics, Construction, Software & IT, and Renewable Energy – analysing the expected impact of global megatrends on key industry parameters for each of these industries. These industries have been selected based on considerations of both expected megatrend impact, regional positions of strengths**, and political interest in a GC context
- Section 3:** Based on the analysis of megatrend impact on industry parameters, emerging opportunities and threats are identified for each industry.
- Section 4:** The report zooms out again to identify cross-industry themes, showing the major moves that are driven by megatrends across the six selected industries.
- Section 5:** Finally, the themes that are most critical to address in a GC context are elaborated with relevant regional perspectives and potential strategic focus areas, providing a strategic direction for the future regional growth strategy development.

*See Appendix D for the list of interviewees
**See Appendix B for industry strength and potential mapping

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Executive summary

Executive summary

15 global megatrends shape the future business environment with regional impact on Greater Copenhagen

Purpose and approach

This report has been prepared by Monitor Deloitte for the Danish Ministry of Industry, Business & Financial Affairs, Region Hovedstaden (the Capital Region), and Region Sjælland (the Zealand Region).

The analyses in this report provide a comprehensive view on global megatrends and how they may be expected to impact a range of selected industries on a timeline looking towards ~2030*. Focus is on identifying changes to industry structures and market dynamics and uncovering the potential opportunities and threats they lead to – both within each industry and across. The results serve as input to the subsequent regional strategic planning by pointing to overall themes central to unlocking future growth potential in Greater Copenhagen** facing the impact of megatrends.

Besides publically available sources, the work in this report is conducted using proprietary Monitor Deloitte data and research, interviews with experts from the global Monitor Deloitte network and key stakeholders in Greater Copenhagen.

Global megatrends

We define a megatrend as a long term shift in behaviour or attitude with global impact across multiple industries, sectors and domains. 15 global megatrends have been identified and clustered according to the STEEP categorization – see insert. Environmental and political megatrends impact several of the investigated industries but have limited correlation with the other megatrends. Social- and technology-related megatrends are most impactful and transformative across industries. Together with the megatrends of blurring industry boundaries and globalisation – which to a large extent are enabled and enhanced by technology megatrends – they drive fundamental shifts in established business models as well as fragmentation of value chains. While several of the global megatrends have been on the agenda for several years these fundamental changes to industry structures now evident are more recent impacts.

*The selected industries are: Life Sciences, Financial Services, Software & IT, Transport & Logistics, Construction, and Renewable Energy

**In the scope of this report, Greater Copenhagen is defined as the geographical area of Eastern Denmark, i.e. not including Skåne as per usual terminology

THE GLOBAL MEGATRENDS

Society

- 1 Changing demographics
- 2 Urbanisation
- 3 Individual empowerment
- 4 Advances in electronics

Technology

- 5 Digitisation
- 6 Hyperconnectivity
- 7 Economic power shift
- 8 Blurring industry boundaries
- 9 Globalisation

Economy

Environment

- 10 Climate change
- 11 Resource scarcity
- 12 Ethical consumption
- 13 Political power shift
- 14 Polarization
- 15 Regulatory scrutiny

Politics

Executive summary

Looking across industries, seven impact themes emerge as a consequence of global megatrends...

Based on the analysis of how megatrends will likely impact the selected industries, as well as the opportunities and threats that may emerge as a consequence thereof, **seven impactful cross-industry themes** have been identified:



Embracing digital transformation

Increasing degree of digitization of processes, products and services across industries allowing for cost reductions and greater customization of offerings. Companies not transforming successfully are left behind.



Competing in collaborative networks

Collaborative networks and ecosystems emerge for incumbents to be able to compete, as they provide access to technical and innovative skills or sharing of assets. The widespread use of digital technology and a mounting performance pressure are key drivers of this development.



Striving for scale or specialization

Increasing competitive pressure forces businesses to rapidly achieve scale or become highly specialized to remain competitive. In addition, small, home-market oriented businesses face mounting performance pressure as barriers to entry are minimized by digitalization and globalization.



Transitioning to sustainability

Sustainability is integrated in all elements of business across a wide variety of industries, as it serves as a way of 'future-proofing' businesses and brand building. This is due to both an increasing customer demand for sustainability as well as expectations of future regulatory requirements.

Key strategic themes for Greater Copenhagen



Fighting a global war for talent

Attracting and retaining skilled workers are major challenges for most industries, traditional ones in particular, and competition for talent cuts across industries and borders. This is primarily due to global competition for the same talent pool as well as an aging workforce.



Overcoming compliance complexity

Increasing compliance complexity across most industries as well as significant challenges for capital intensive industries due to short-term policy uncertainty. Main driver is a regulatory drag, as regulations struggle to adapt to a digital and rapidly changing environment.



Exploring pockets of growth

Blurring industry boundaries and technological advancement both enable and require exploration of new growth opportunities, often outside the core but within the same value chain, as new technologies enable radical innovation at an accelerating pace of change.

While all seven cross-industry themes are impactful from an industry point of view, not all are directly actionable by public institutions. Through individual interviews with a range of key stakeholders in Greater Copenhagen, three of the themes have consistently been highlighted as the most critical to address, as elaborated on the following page.

Executive summary

...while three of the themes are of key strategic importance to Greater Copenhagen

Key strategic themes for Greater Copenhagen *Themes are based on both analyses as well as stakeholder interviews and are not entirely restricted to megatrend impact*



The talent and workforce agenda is of pivotal importance for the future competitiveness of Greater Copenhagen. For the Capital region, the issues are primarily concerned with a lack of specialised talent in STEM-areas and a fierce competition with other global metropolises. For the Zealand region, however, the issues relate to persistent education gaps compared to the rest of the country, as well as ongoing urbanisation driving skilled labour to leave the region in favour of the Capital region. Although the agenda is very broad with multiple components, strategic focus areas such as liveability, competence development and global awareness of the region through concerted efforts between public and private institutions may address the key issues in both regions while also serving as an enabler for several other growth themes, such as collaborative networks and clusters, exploration of new pockets of growth, and achievement of international scale.



Helping businesses overcome compliance complexity by reducing friction is a highly actionable lever for public institutions to ensure the optimal conditions for growth. This strategic theme cuts across both regions, as there is a need for an approach in all of Greater Copenhagen that to a far larger extent transcends administrative borders. Seen from a business perspective, current administrative borders and parallel institutional set ups are obsolete, and the coherence of the Greater Copenhagen area is relatively low. This hinders the exploitation of the full potential of Greater Copenhagen as one, seamlessly integrated and globally competitive business region. Hence, there is no distinction between the two regions, as the theme calls for a joint effort of reducing friction through a focus on supporting compliance as well as streamlining regulations. This is also closely related to the talent and workforce agenda, as reducing regulatory friction and administrative borders can facilitate the mobility of talent.



The exploration of growth opportunities in highly specialized niche areas is also a key strategic theme for Greater Copenhagen, although it is not as directly actionable by public institutions. These growth opportunities may arise in a range of existing and mature sectors and is expected to be driven by application of new technologies. Tapping into such opportunities requires increasing focus on digitalization, innovation and internationalization, particularly for small and mid-sized enterprises (SMEs). The ability to commercialize and scale such pockets of growth internationally will be key to future competitiveness in Greater Copenhagen due to the limited home-market size. Across the two regions, enabling strategic focus areas relate to ensuring a flexible and agile regulatory environment e.g. through sandboxing initiatives, facilitating access to risk-willing growth capital, and empowering small- and mid-sized enterprises to internationalize, specialize, and scale.

Section 1

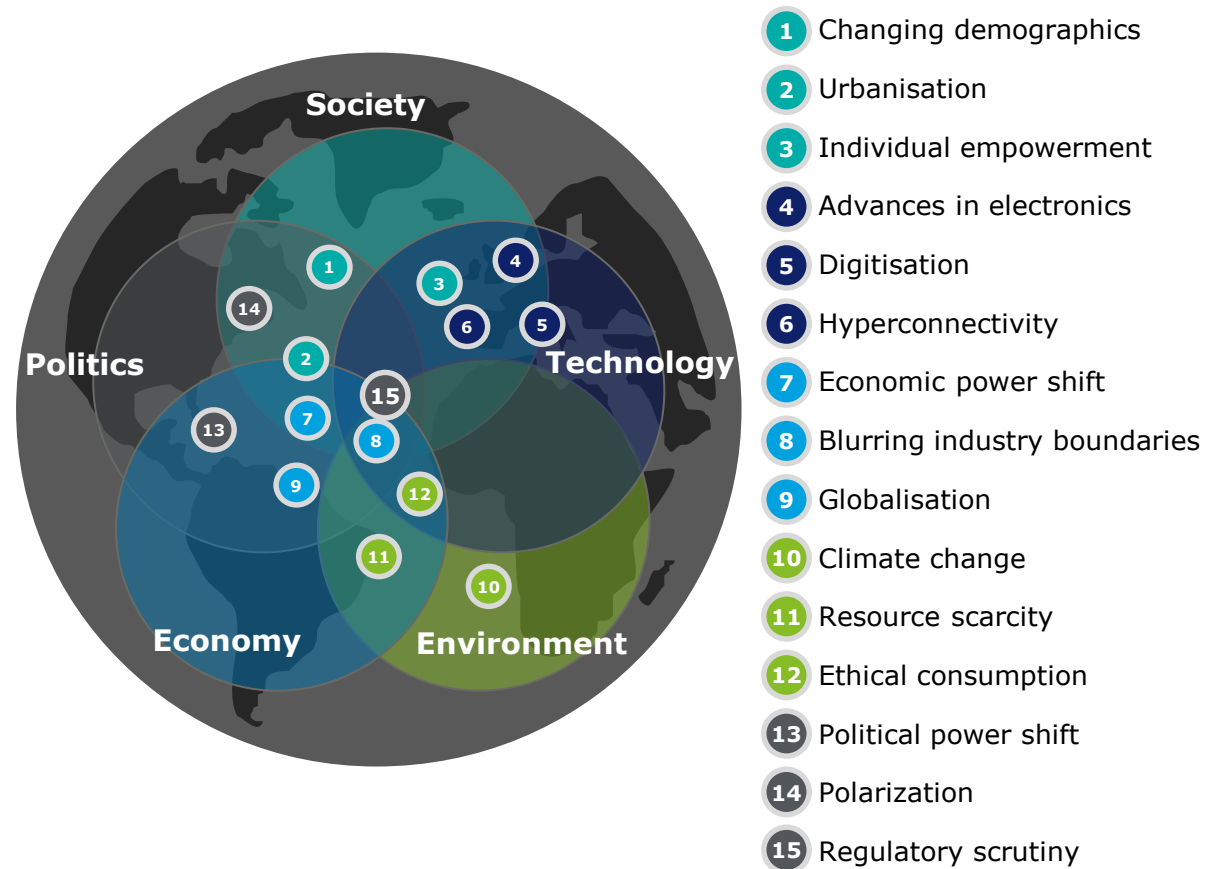
Megatrends

In this section we present the set of global megatrends which are expected to be most impactful towards 2030. We describe what they are and what they are composed of. This allows for an analysis of their impact on industries in Section 2.

Megatrends | Overview

Megatrends are complex, long term shifts with significant global impact across multiple industries, sectors and domains

Mapping the megatrends by STEEP categories



How we define megatrends

A megatrend is a long term shift in behaviour or attitude with global impact across multiple industries, sectors and domains. To be considered a megatrend, the shift or movement must have already occurred to some extent and be expected to continue with reasonable probability. For the purpose of this project, the time horizon is towards 2030.

The driving forces behind megatrends are complex and overlapping, which is why megatrends often emerge at the intersection of two or more STEEP categories. The map on the left shows this overlapping and interrelated nature of the megatrends. However, in the following pages of this report, the megatrends have been categorised according to the primary STEEP category to which they relate, in an attempt to better understand where the future impact will be.

How we define subrends




To gain a deeper perspective we identify subrends within each megatrend. These subrends are selected main components of the megatrend. They are not drivers but narrower shifts part of the main shift. They do not constitute an exhaustive set.

Source: Monitor Deloitte - Center for the Long View (2017)

Megatrends | Social



Megatrends related to social factors include changing demographics, urbanisation and individual empowerment




	Description	Exemplary subtrends
 Changing demographics	Demographic shifts are driving changes in values, cultures and priorities. The major movements relate to an increasing and ageing world population as well as mass migration with wide-ranging implications for, amongst other, sustainability, education and employment.	<ul style="list-style-type: none">• Population growth: Continued population growth, albeit, at a lower pace. Growth mainly in developing countries, while other countries, e.g. Japan and Germany, have fertility rates below replacement rate• Ageing: Higher life expectancy and falling birth rates are increasing the proportion of elderly people• Mass migration: Increasing migration driven by war/conflicts and economic and educational asymmetries
 Urbanisation	Urbanisation - the migration from rural areas to cities - will continue to increase and at an accelerated rate compared to the past 20 years. 70% of the world's population is estimated to reside in cities by 2050 ¹ placing an even greater burden on infrastructure, housing, and natural resources.	<ul style="list-style-type: none">• Megacities: With the continued growth in breadth and number, the aggregate power of some cities will rival that of national governments due to sheer size• Infrastructure pressure: Megaprojects will be required to build city infrastructure, support new trade flows, address education, health, security, employment demands, etc.
 Individual empowerment	In today's society, it is all about the individual over the collective. Advances in education and technology have helped empower individuals like never before, impacting consumer behaviour, employment and educational patterns.	<ul style="list-style-type: none">• Personalisation of products: End-users expect more tailor-fitted solutions given increased sharing of data• Knowledge society: Increasing access to knowledge, information and education for individuals, along with a rise in demand for knowledge workers and human capital

Sources: ¹OECD Environmental Outlook to 2050; Monitor Deloitte - Center for the Long View (2017)

Megatrends | Technological



Technological megatrends such as advances in ICT and electronics, digitisation, and hyperconnectivity are transforming industries and consumer behaviour across the globe

	Description	Exemplary subrends
 Advances in ICT* and electronics	The rapid evolution in technology is continuing in an even higher pace. The boundaries for what can be produced are constantly moved, enabling other digital trends and leading to new opportunities for companies, products and services.	<ul style="list-style-type: none">• Shifting competences: Widespread adoption of technology requires new competencies and upskilling of the workforce• Decreasing business life cycles: Falling life span of businesses due to increasing adoption and innovation rates• Emerging technologies: Technologies such as artificial intelligence, robotics, 3D printing and blockchain are expected to emerge with significant implications for the operations of a lot of companies
 Digitisation	We are seeing a full digitisation of our former analogue world, as physical products and processes move into the digital world opening new doors of connectivity and impacting the way individuals interact.	<ul style="list-style-type: none">• Internet of things: The ecosystem of electronic devices connected to the internet continues to grow• Big data analytics: Big data is the generation, collection and analysis of huge amounts of data e.g. for customer analyses, process optimisation, etc.• New digital business models: New business models are emerging based on software and digital distribution channels
 Hyperconnectivity	With the rise in ICT technologies, new doors open for connectivity, networks and markets. Users increasingly engage through multiple systems and devices to remain constantly connected to social networks and streams of information, creating new ways of interacting.	<ul style="list-style-type: none">• Multi-screen consumption: Multi-screen consumption is becoming a widespread phenomena reflected in an increasing number of devices per person from 1.84 in 2010 to 3.47 in 2015 and an expected level of 6.58 in 2020¹• Data Security: The world's most valuable resource is no longer oil, but data², and as our world becomes ever-more connected, issues of cyber and data security become paramount



Sources: ¹Statista (2016); ²The Economist (2017); Monitor Deloitte - Center for the Long View (2017)

*ICT = Information and Communication Technology

Megatrends | Economic



Economic megatrends are comprised of an economic power shift towards the East and South, blurring industry boundaries as well as globalisation

	Description	Exemplary subtrends
 Economic power shift	With the rising importance of emerging markets and stagnation within advanced economies, the global economy is witnessing a paradigm shift, as the economic centre of gravity is shifting towards the East and South.	<ul style="list-style-type: none">• Expanding middle class: New consumer groups emerge as poverty is massively reduced, particularly in the Asia Pacific region• Emerging and developing economies: are expected to account for two-thirds of global GDP* by 2030, up from about 50% in 2010¹
 Blurring industry boundaries	As boundaries have blurred, business ecosystems are emerging across traditional industry silos. At the same time, shadow markets are developing alongside traditional sectors, creating widespread market complexity.	<ul style="list-style-type: none">• Physical meets digital: Merging physical and digital worlds, turning traditional industry models upside down• Tech platforms: 'Owning' the consumer link is key, as illustrated by emerging self-service and peer-to-peer platforms• Sharing Economy: Unlocking idle capacity and sharing and reusing products rather than buying new ones
 Globalisation	The global flows of trade, capital, people and information are increasing with technology as a key accelerator. While trading and finance have long been a global phenomena, the range of flows are accelerating towards and between emerging markets.	<ul style="list-style-type: none">• Global workforce: Rise of a global workforce, who consider mobility a hallmark of employment• Connected markets: Political and economic structural changes in one region have huge impact on major financial markets leading to increased volatility




Sources: ¹IMF (2017); OECD (2016); The Economist (2012); Monitor Deloitte - Center for the Long View (2017)

*GDP = Gross Domestic Product

Megatrends | Environmental



Megatrends such as climate change, resource scarcity and ethical consumption characterise the environmental forces impacting industries across the world




	Description	Exemplary subtrends
 Climate change	As climate change continues, natural hazards and abnormal weather patterns will increasingly have widespread effects on our socioeconomics, crop production, food security, migration, and political landscape in unprecedented ways.	<ul style="list-style-type: none">• Global warming: Increasing temperatures, with 2016 being the warmest year since modern recordkeeping began in 1880¹, leading to rising sea levels across the globe• Changes in precipitation: Some areas are experiencing changes in precipitation ranging from extreme flooding to drying of land²
 Resource scarcity	As the world's population continues to grow, the demand for energy, water, land and metals are rapidly increasing and exceeding supply, which will have huge social implications for poverty, inequality, and public health.	<ul style="list-style-type: none">• Drought: Water is becoming a scarce resource, with two-thirds of the world's population expected to face water stress by 2025³• Not so common commodities: Prices for commodities are increasing, as the planet's natural resources are under pressure• Renewables: Supply sources are changing, e.g. through a shift towards renewable energy
 Ethical consumption	The influence of social activism has continued to rise as consumers become more empowered, demanding environmentally sustainable products, increased CSR efforts and other commitments to society, exemplified by the global Sustainable Development Goals articulated by the UN.	<ul style="list-style-type: none">• Consumer awareness: Aware consumers push for healthy and organic food, reduced food footprints, and sustainability• Circular economy: Increased asset utilization, new ownership models, as well as recycling and redistribution of unused products• Green cities: 'Green' cities, which are not only sustainable, but resilient, will become more widespread towards 2050

Sources: ¹NASA & NOAA (2017); ²NASA (nd.); ³UN Food and Agriculture Organization (2018); Monitor Deloitte – Center for the Long View (2017)

Megatrends | Political



Megatrends related to global politics include a political power shift, widespread polarization and increasing regulatory scrutiny

	Description	Exemplary subrends
 Political power shift	<p>The world's economic and geopolitical power center is shifting from West and North to East and South, as we are moving from the unipolar world order of the late 20th century – characterised by G7-focused decision making – to a multipolar world characterised by greater plurality of decision-making fora.</p>	<ul style="list-style-type: none">• Asian power: By 2030, China will likely be the largest economy, a first-rate military power and a global education magnet• New power: The 'Next 11'* – Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, the Philippines, Turkey, South Korea and Vietnam – will collectively overtake the EU-27 economically by 2030¹
 Polarization	<p>Divisiveness and divergence is on the rise, as social and political groups become more and more divided along ideological lines. Populism and radicalism is becoming more prevalent, as a general dissatisfaction with the status quo seems to define the agenda across political systems.</p>	<ul style="list-style-type: none">• Rise of ideology: Fuelled by individual empowerment, access to ICT, and growing wealth inequalities, ideology is on the rise• Societal divides: Increasing divides in societal groups with difference in values are driving a political polarization• Politicism of science: As environmental outcomes are increasingly tied to political and financial motivations, a politicism in scientific reasoning has emerged
 Regulatory scrutiny	<p>Recent regulations across industries (e.g. finance and health care) have affected business models, increased complexity and costs, and come with a number of global considerations regarding legal implications.</p>	<ul style="list-style-type: none">• Regulatory drag: Regulations are struggling to keep up with the pace of technological development, resulting in uncertainty and ambiguity• Harmonisation: Harmonisation of regulations is increasingly being implemented to decrease cross-border differences and hence complexity

Sources: ¹Deloitte (2013); Monitor Deloitte – Center for the Long View (2017)

*'Next 11' identified and coined by Goldman Sachs

Section 2

Megatrend impact on selected industries

In this section we analyse the impact of megatrends identified in section 1 on selected industries. We make a rough assessment of the impact on all industries (the industry matrix, p. 16) as an input to the subsequent deep dives. Here, each selected industry, six in total (see p. 17), is analysed on a range of industry parameters (see p. 18) to understand the structural impact of megatrends in greater detail.

Megatrend impact | Industry matrix

The impact of each megatrend is assessed on a global industry level to identify major transformative movements and intersections of particular interest

























		Industries														
		Mfg. of Industrial Products	Mfg. of Consumer Products	Retail, Wholesale & Dist.	Tourism & hospitality	Energy & Resources	Mobility	Transport & Logistics	Financial Services	Prof. Services	Construction	Health Care	Life Sciences	Education	Software & IT	Media & Telco.
Megatrends	Demographic change	•	H	→	→	→	•	•	•	•	H	→	→	•	•	•
	Urbanisation	•	•	→	→	→	H	H	•	•	H	•	•	→	→	•
	Indiv. empowerment	•	H	←	H	H	H	•	←	•	•	←	←	→	→	H
	Adv. in ICT & electronics	→	→	→	•	H	→	H	H	H	H	→	H	•	→	H
	Digitisation	→	→	H	H	•	•	→	H	H	→	→	→	→	→	H
	Hyper-connectivity	•	•	H	H	•	•	•	H	•	→	•	•	•	→	→
	Economic power shift	•	•	→	→	→	→	•	•	•	•	•	→	→	→	•
	Blurring ind. Boundaries	•	H	H	H	•	H	•	H	•	•	H	H	•	→	H
	Globalisation	•	•	•	→	•	H	→	•	H	H	•	→	→	→	•
	Climate change	•	•	•	H	H	•	•	•	•	H	•	•	•	•	•
	Resource scarcity	←	←	•	•	←	←	←	•	•	←	•	•	•	•	•
	Ethical consumption	←	←	H	•	H	H	•	•	•	H	•	•	•	H	•
	Political power shift	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Polarization	•	•	•	•	H	•	•	•	•	•	H	•	•	•	•
	Regulatory scrutiny	•	•	•	•	←	←	•	←	←	•	←	←	•	←	•

Sources: Monitor Deloitte analysis and Subject Matter Expert interviews

← = negative impact; → = positive impact; H = high impact, uncertain direction; • = low to medium impact

Industry selection | Overview

Based on the expected megatrend impact and regional considerations six industries have been selected for deep dive analysis

Industries selected for deep dive analysis	Significant mega-trend impact?	GC industry strength and potential?*	Particular political interest in GC?	Comment on industry selection
 Life Sciences				<p>Life Sciences has a strong position of strength in GC (driven by both regions) as well as high potential growth. While the impact of the megatrends is expected to be high, the direction is uncertain</p>
 Financial Services				<p>Despite a neutral position of strength and growth potential in GC, Financial Services is selected due to a negative megatrend impact combined with a relatively high proportion of employment in GC</p>
 Software & IT				<p>Software & IT has high potential growth and a predominantly positive impact from megatrends. GC's relative position of strength is positive and stronger than the national position</p>
 Transport & Logistics				<p>GC has a slightly positive position of strength within Transport & Logistics mainly driven by Shipping. The industry has high growth potential and a medium impact from megatrends in both directions</p>
 Construction				<p>The construction industry has a weak position in GC with low growth potential. However, the industry accounts for a relatively large proportion of the GC workforce, and hence it is of great political interest</p>
 Renewable Energy				<p>Renewable Energy has been selected for deep dive analysis due to a significant megatrend impact and great political interest. The industry position in GC cannot be assessed for a subset of multiple industries</p>

Source: Monitor Deloitte analysis

Industry parameters | Overview

We have identified four industry parameters that megatrends can impact, which will form the basis for the deep dive analyses of the selected industries

Business Model

Any given industry's business model can be broken down into 10 core components in three areas – configuration, offering, and experience:



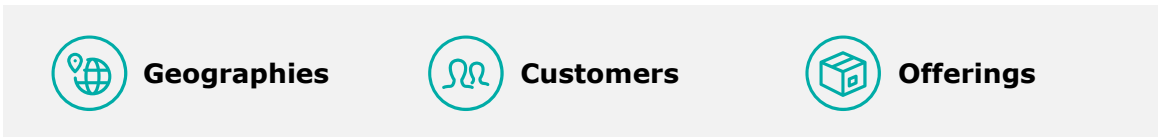
Core Competencies

The megatrend impact on an industry's core competencies may significantly shift competitive advantages based on three elements:



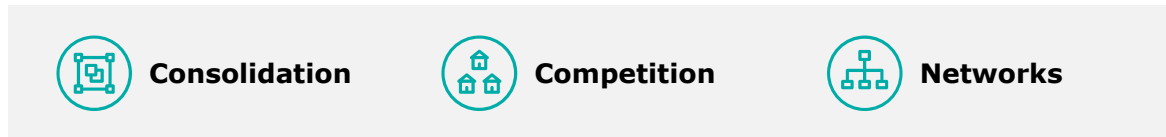
Core Market

Megatrends' impact on an industry's core markets can drive changes in three primary areas:



Industry Structure

Megatrends may impact the industry structure, in which case the shifts will most often be related to:



























Impact of megatrends | Life Sciences



Life Sciences is highly impacted by social and technological megatrends with fundamental changes to established business models and core competencies

BREAKDOWN OF MEGATREND IMPACT ON INDUSTRY PARAMETERS

Parameter	Main megatrends	Rationale for impact	Implication
 <i>Business Model</i>	<ul style="list-style-type: none">  Tech advances  Digitisation  Indiv. empowerment  Globalisation 	<ul style="list-style-type: none"> • Technological advances and increasing customer expectations enable and require changes in offerings and experiences • Digitisation and global competition from lower-priced generics are pushing for a paradigm shift towards targeted and predictive treatments 	<ul style="list-style-type: none"> • Novel configurations with tech convergence • Shift in value prop. and product delivery 
 <i>Core Market</i>	<ul style="list-style-type: none">  Globalisation  Economic power shift  Indiv. empowerment  Demographic change 	<ul style="list-style-type: none"> • Non-communicable and 'life-style' diseases are becoming more widespread as the population ages and living standards improve • Individual empowerment causes a shift in customer behaviour from passive patients to engaged consumers 	<ul style="list-style-type: none"> • Rising consumerism requires mindset shift for traditional Life Sciences companies 
 <i>Core Competencies</i>	<ul style="list-style-type: none">  Digitisation  Tech advances  Blurring boundaries  Globalisation 	<ul style="list-style-type: none"> • The convergence with digital technology will require radically new competences, and the global war for STEM talent will intensify • As Real World Evidence (RWE) and patient-generated data is used for evaluating efficacy of treatments, collection and analysis of data is key 	<ul style="list-style-type: none"> • Talent scarcity and global mobility • Pivotal importance of RWE and patient data 
 <i>Industry Structure</i>	<ul style="list-style-type: none">  Digitisation  Indiv. empowerment  Blurring boundaries  Reg. Scrutiny 	<ul style="list-style-type: none"> • Competition from new entrants including untraditional players such as tech companies, generics and biosimilars • Networks with multiple partners will emerge for incumbents to be able to compete and improve innovation and productivity 	<ul style="list-style-type: none"> • Increasing network competition • Global industry consolidation 

Sources: SME interviews and Monitor Deloitte analysis

Deep dive: Business model impact | Life Sciences



The traditional Life Sciences business model will undergo significant transformation, with major shifts in configuration, offering and customer experience

Anticipated change

Fragmentation of existing value chains into collaborative networks

- Tech advances
- Digitisation
- Blurring boundaries

CONFIGURATION

Rationale for impact

- Technological advancements, digitisation, and the increasing importance of real world data means that the industry is converging with digital technology
- As other adjacent industries move closer to the core of Life Sciences, the result will likely be a mix of current industry specific business model configurations, with collaborative networks being of pivotal importance

Implication

- Scarcity of STEM-talents leads to a global cross-industry war for talent
- Access to patient-generated data will be key to product development
- Break up of established value chains with more open innovation

New offerings with more focused and connected product systems

- Individual empowerment
- Tech advances

OFFERING

- With individual empowerment, buying behaviour is shifting from passive patients to engaged and informed consumers
- Together with globalisation, rising consumerism is driving increased competition from lower-priced generics and biosimilars, putting traditional blockbusters under pressure
- Technological advances are enabling a shift towards targeted and predictive treatments, as a stark contrast to the traditional 'one-size-fits-all' approach

- Use of technology, patient-generated data and RWE to develop precision medicine
- Moving "beyond the pill" towards a more holistic treatment approach
- Disruption of traditional R&D-model characterized by long and costly linear development process

Changing expectations to customer experience

- Individual empowerment
- Hyper-connectivity

EXPERIENCE

- Customers are becoming actively engaged and 'always on' through the use of digital technology for self-monitoring
- With the shift from patients to consumers, expectations to customer experience are undergoing significant changes
- The movement calls for a mindset shift from "telling and selling" to "listening and engaging"

- Platforms for customer engagement, e.g. online communities or health apps enable personal patient feedback
- Fundamental shift from current value proposition and how products are delivered and developed

Sources: SME interviews and Monitor Deloitte analysis

Deep dive: Core competencies impact | Life Sciences



The LS industry faces a shift in capabilities driven by the convergence with digital technology as well as significant talent scarcity

Anticipated change

Global cross-industry war for talent

-  Blurring boundaries
-  Globalisation

INTANGIBLE RESOURCES

Rationale for impact

- Persistent talent shortages are expected to continue to challenge the industry, particularly due to increasing global competition for STEM* talent across different industries
- Significant capability gaps exist in many emerging markets, where there is an acute shortage of qualified workers

Implication

- Access to international talent will be pivotal to competitiveness
- New work models, e.g. crowdsourcing and remote workers, will be required to tap into a global and mobile workforce



Advanced data analytics capabilities

-  Digitisation
-  Tech advances

SKILLS & CAPABILITIES

- With increasing price pressure and a change in demand from volume to value, companies can no longer exclusively rely on the 'gold standard' of randomized clinical trials to prove the efficacy of treatments
- RWE and patient-generated data are becoming key to developing new treatments and proving the value and efficacy

- The convergence with digital technology requires a capability shift
- Capturing and deriving value from data from dispersed sources is becoming a core capability



Movement towards open innovation

-  Blurring boundaries

SKILLS & CAPABILITIES

- With a steep patent cliff ahead, big pharma companies in particular face an urgent need to replenish pipelines
- However, long development cycles and increasing costs mean that incumbents struggle with decreasing productivity
- Smaller companies, who are more focused and nimble, outperform their larger competitors on productivity

- Tapping into external capabilities, e.g. research institutions and start-up communities, will become a necessity to drive innovation
- Agility and focus in R&D helps drive productivity



Sources: SME interviews and Monitor Deloitte analysis









*STEM is an acronym for Science, Technology, Engineering and Mathematics

Impact of megatrends | Financial Services



Financial Services is highly impacted by increasing customer expectations and technological trends with significant changes to business model and industry structure

BREAKDOWN OF MEGATREND IMPACT ON INDUSTRY PARAMETERS

Parameter	Main megatrends	Rationale for impact	Implication
 Business Model	<ul style="list-style-type: none"> Tech advances Digitisation Indiv. empowerment Reg. Scrutiny 	<ul style="list-style-type: none"> Technological advances and increasing customer expectations enable and require increased automation of processes Digitisation and increasing customer expectations drive customisation (e.g. "holistic advice") and digitisation of offerings and ways of delivery 	<ul style="list-style-type: none"> Cost efficiency provides licence to play Shift in value prop. and product delivery 
 Core Market	<ul style="list-style-type: none"> Demographic changes Indiv. empowerment Digitisation 	<ul style="list-style-type: none"> The number of offerings are expected to expand as more customised solutions are demanded, cf. above Customer segments have a longer period of de-saving, due to increasing lifespans. Together with distressed public pension schemes, this will require sophisticated management of personal finance 	<ul style="list-style-type: none"> Increasing need for sophisticated and customisable management of personal finance 
 Core Competencies	<ul style="list-style-type: none"> Indiv. empowerment Digitisation Blurring boundaries 	<ul style="list-style-type: none"> Automation of back and frontend activities (as described under business model impact) will reduce the needed workforce volume Technological capabilities will be key going forward Greater customer-centricity will be key to delivering winning customer experience 	<ul style="list-style-type: none"> War for talent Renewal of legacy IT systems Need for customer-centricity 
 Industry Structure	<ul style="list-style-type: none"> Digitisation Indiv. empowerment Blurring boundaries Reg. Scrutiny 	<ul style="list-style-type: none"> Competition from new entrants including technology-based players and adjacent industries, forcing traditional financial services providers to chose clearly where to play and how to win Driven by regulatory changes (e.g., PSD2) and by technological developments, ecosystems of specialized providers will emerge 	<ul style="list-style-type: none"> Value proposition challengers Value chain fragmentation Increased value through partnerships 

Sources: SME interviews and Monitor Deloitte analysis

Deep dive: Business model impact | Financial Services



The Financial Services business model will experience pressure on cost of operation and shifts in value proposition and how products are delivered and developed

Anticipated change

Increasing automation of processes

Tech advances
Individual empowerment

PROCESS

Rationale for impact

- Technological advancements enable a higher degree of operational automation through the use of e.g. blockchain, IoT and Artificial Intelligence, with e.g. robo-advisors complementing human advisors
- Informed consumers have higher expectations for efficient performance/delivery and lower prices resulting in a downward pressure on profitability

Implication

- Automation of processes will become a hygiene factor for companies in order to stay competitive on cost optimisation and efficient delivery
- New technologies, such as blockchain and AI, could potentially render banks disintermediated in certain areas

Customisation and digitisation of offering and experience

Individual empowerment
Digitisation

OFFERING EXPERIENCE

- Consumers increasingly demand customised solutions and only want to pay for "what they get", driving a change in the type of products in demand, such as on-demand and pay-per-use insurances
- Customer expectations to constantly being online and instant access move the demand for customer experience towards digitisation of distribution, product, services etc., with increasing demand for more holistic advice and service

- Fundamental shift from current value proposition and how products are delivered and developed
- Market shares with younger customer segments at risk

Increased compliance complexity

Reg. scrutiny

PROCESS

- Policy efforts to ensure data protection and increase financial stability by bolstering solvency impacts financial services companies by driving up complexity of compliance and hence cost of operations

- Increasing solvency requirements increase financial stability while negatively impacting return on assets
- Cost of operation will increase, pressuring smaller players

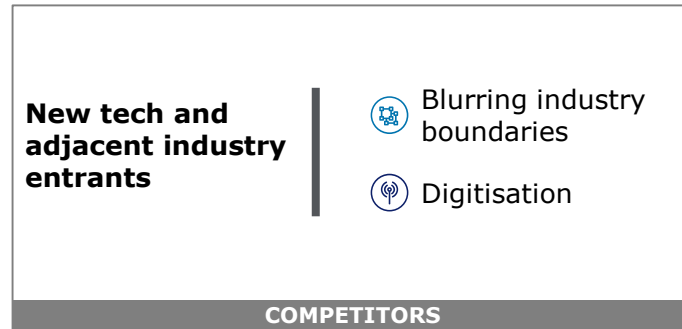
Sources: SME interviews and Monitor Deloitte analysis

Deep dive: Industry structure impact | Financial Services



New challengers with focus on emerging offerings and increasing digital partnerships drive fragmentation of the Financial Services value chain

Anticipated change

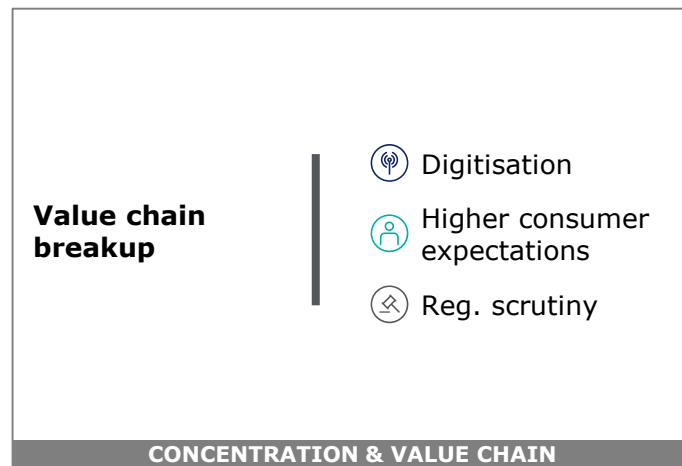


Rationale for impact

- Increased digital adoption among consumers enable technological-savvy players to enter the market with innovative and disruptive solutions based on technology. Use cases include Apple and Alibaba with their - at the time - innovative payment solutions
- Blurring industry boundaries also attract players from other adjacent industries such as retailers offering financing or insurance in connection with product purchases, while also enabling Financial Services companies to move into adjacent industries

Implication

- New entrants challenge incumbents on emerging value proposition and hence the reach to younger segments
- Opportunity for established players to enter adjacent industries through digitisation, e.g. online real estate valuation services, etc.



- The wave of new tech entrants related to digitisation and consumer expectations for constant connectivity, induce new digital ecosystems for incumbents to be able to compete. The ecosystems drive a fragmentation of the horizontal value chain as each party increasingly handles a specific activity. Examples include partnerships between InsurTechs/FinTechs and traditional financial service institutions
- The same impact is observed across the vertical value chain, as new entrants drive a fragmentation of the competitor landscape. An adverse impact from regulations, such as open banking regulations, also drive the break up of value chains

- The digital ecosystems can enhance competitiveness through access to new customers/revenue streams and innovative solutions based on combined capabilities
- Banks risk losing direct customer touch points due to open banking regulations and break up of value chains




Sources: SME interviews and Monitor Deloitte analysis

Impact of megatrends | Software & IT



Software & IT is being carried by significant tailwind, as megatrends provide a highly attractive outlook for the industry

BREAKDOWN OF MEGATREND IMPACT ON INDUSTRY PARAMETERS

Parameter	Main megatrends	Rationale for impact	Implication
 <i>Business Model</i>	<ul style="list-style-type: none"> Blurring boundaries Digitisation Indiv. empowerment Reg. Scrutiny 	<ul style="list-style-type: none"> New offerings and services are constantly emerging, and software is finding application areas in previously analogue areas Software is increasingly perceived as a service, and a connected product system is key to competitiveness 	<ul style="list-style-type: none"> New profit models Connected product systems New application areas 
 <i>Core Market</i>	<ul style="list-style-type: none"> Hyperconnectivity Digitisation Tech advances Blurring boundaries 	<ul style="list-style-type: none"> Given the widespread digitisation and hyperconnectivity, significant growth opportunities are available across multiple sectors and industries New technologies and the merging of the physical and the digital world are spawning a myriad of new application areas and offerings 	<ul style="list-style-type: none"> Convergence of physical and digital New markets and offerings emerging 
 <i>Core Competencies</i>	<ul style="list-style-type: none"> Tech advances Blurring boundaries Reg. Scrutiny 	<ul style="list-style-type: none"> Increasingly specialised skills are needed for unlocking the value of new technologies, such as blockchain and artificial intelligence The importance of cyber security will continue to increase, as regulators scrutinize data privacy practices 	<ul style="list-style-type: none"> Global war for specialised skills Increasing focus on cyber security and data privacy 
 <i>Industry Structure</i>	<ul style="list-style-type: none"> Digitisation Blurring boundaries Globalisation 	<ul style="list-style-type: none"> Due to globalisation and the importance of constant innovation, continued consolidation around the "Big 5" is likely to characterise the industry development Software & IT enterprises are increasingly building collaborative networks that span across different industries 	<ul style="list-style-type: none"> Concentration with large global platforms dominating the game Network competition 

Sources: SME interviews and Monitor Deloitte analysis

*"Big 5" are Apple, Alphabet, Amazon, Facebook and Microsoft

Deep dive: Business model impact | Software & IT



Multiple megatrends are shaping dominant business models towards “everything-as-a-service” and a convergence of physical and digital worlds

Anticipated change

A shift towards “everything-as-a-service”

- Hyperconnectivity
- Digitisation
- Individual empowerment

CONFIGURATION

Rationale for impact

- Due to the widespread digitisation and connectivity, software is increasingly perceived as a “free” service
- A rising tide of flexible consumption models, such as “freemium” models and software-as-a-service (SaaS), is driving a shift in the profit model¹
- According to Gartner, by 2020, 80% of software vendors are expected to use a subscription-based model instead of traditional license and maintenance²

Implication

- Large, global competitors, with connected platform solutions are better positioned to win customers
- Greater focus on data and add-on services to capture value
- Consumers reap benefits of software as a “free” service

Rise of the platform economy

- Hyperconnectivity
- Blurring boundaries
- Globalisation

OFFERING

- As offerings are rapidly expanding and customers and devices are increasingly connected, there will be a growing need for platforms that serve as aggregators of products and services
- The shift towards cloud-based solutions enable near-instant internationalization

- As most platforms are based on network effects, the race will likely be a “winner-takes-all” game
- Large global enterprise are most likely to win this game, as they have the scale to build an ever-increasing product system with add-on services

Integration between physical and digital

- Hyperconnectivity
- Digitisation
- Regulatory scrutiny

EXPERIENCE

- Integration between the previously separated physical and digital worlds is taking place, which means that software and IT is finding new application areas, characterised by the rise of the Internet of Things (IoT)
- As software & IT is being integrated across nearly all aspects of our lives, demands for superior customer experience, cyber security and data privacy will increase

- New application areas across industries and domains
- Expectations of seamless integration of physical and digital spheres will be prevalent
- Increasing public attention to cyber security and data privacy

Sources: ¹Deloitte (2016); ²Gartner (2015); SME interviews and Monitor Deloitte analysis

Deep dive: Industry structure impact | Software & IT



Global consolidation and network competition will favour incumbents, as platforms take the lead in integrating products and services

Anticipated change

Consolidation around US and Chinese incumbents

- Digitisation
- Hyperconnectivity
- Globalisation

CONSOLIDATION

Rationale for impact

- Digitization and hyperconnectivity is driving a need for constant innovation and increasing connection of disparate systems and devices
- Global incumbents are amassing unprecedented levels of scale, with six of the top ten most valuable companies in the world being software & IT firms^{1*}, which enables them to pursue aggressive acquisition strategies across the world

Implication

- Large incumbents will likely consolidate to gain global dominance through aggressive acquisition of innovation
- Regulatory scrutiny is likely to intensify, as global incumbents become increasingly powerful

Platform-based global competition

- Blurring boundaries
- Globalisation

COMPETITORS

- With globalisation and the blurring of industry boundaries, smaller, vertical software providers will face significant challenges, as customers expect integrated product systems
- At the same time, the increasing availability of cloud-based platform solutions enable global incumbents to expand across physical borders with ease

- Intensifying global competition
- Competition based on ecosystems of integrated solutions and services
- Small players will be challenged by the scale of global incumbents

Cross-industry collaboration

- Digitisation
- Blurring boundaries

NETWORKS

- The complexity of designing tomorrow's technology platforms requires deep expertise in a wide array of areas, which is driving an unprecedented wave of collaboration across different industries, as technology incumbents are creating collaborative innovation networks through e.g. open-source platforms and joint-ventures

- Convergence with other industries
- Increasing network completion
- Open innovation becoming key to maintaining speed and agility

Sources: ¹Forbes (2017); SME interviews and Monitor Deloitte analysis

*By market value: Apple (#1), Alphabet (#2), Microsoft (#3), Amazon (#4), Facebook (#6), Tencent (#10)

Impact of megatrends | Transport & Logistics



Technological and social megatrends are shaping the new reality for Transport & Logistics with high implications for the industry's business model and core competencies

BREAKDOWN OF MEGATREND IMPACT ON INDUSTRY PARAMETERS

Parameter	Main megatrends	Rationale for impact	Implication
<p><i>Business Model</i></p>	<ul style="list-style-type: none"> Tech advances Digitisation Indiv. empowerment 	<ul style="list-style-type: none"> Rising standards of delivery offerings (speed, convenience and low cost), require optimization of processes through data-driven operations Increasing use of alternative transportation means to accommodate new consumer demands and lower cost 	<ul style="list-style-type: none"> Rising standards for delivery options Cost efficiency provides licence to play <p>DEEP DIVE</p>
<p><i>Core Market</i></p>	<ul style="list-style-type: none"> Digitisation Indiv. empowerment Globalisation 	<ul style="list-style-type: none"> Higher e-commerce activity - partly attributable to digitization and changing consumer patterns - drives increased demand for transportation and results in delivery fragmentation (smaller deliveries) Globalisation is increasingly expanding transportation routes 	<ul style="list-style-type: none"> Increasing volumes More complexity in deliveries
<p><i>Core Competencies</i></p>	<ul style="list-style-type: none"> Indiv. empowerment Demographic change Digitisation 	<ul style="list-style-type: none"> New operational opportunities (e.g. route optimization) enabled by digitization and data require technological capabilities Changes in education and demography combined with increased transportation demand drive labour and skills shortage 	<ul style="list-style-type: none"> Shift in capabilities towards data analytics War for talent <p>DEEP DIVE</p>
<p><i>Industry Structure</i></p>	<ul style="list-style-type: none"> Blurring boundaries Tech advances 	<ul style="list-style-type: none"> Technological advances enable the emergence of network platforms and sharing of assets driving a diffusion of the delivery ownership i.e. fragmentation of the horizontal as well as vertical value chain 	<ul style="list-style-type: none"> Network platforms and asset sharing make it possible for smaller players to proliferate

Sources: SME interviews and Monitor Deloitte analysis

Deep dive: Business model impact | Transport & Logistics



The ability to take advantage of data will be key for carriers to compete both in terms of consumer delivery standards and optimization of operations

Anticipated change

Rising standards for delivery offerings

- Higher consumer expectations
- Digitisation
- Tech advances

OFFERING

Rationale for impact

- Changing consumer expectations for delivery speed, shipping price (often free), flexible delivery options and package traceability keep increasing the standard for transport offerings
- Digitization and new technological advances enable suppliers to adjust processes (see below) and introduce new concepts to meet the rising standards (e.g. smart lockers)

Implication

- As standards continue to rise, innovative solutions and operational efficiency will be key to remain competitive and profitable



Increased efficiency through data-driven operations

- Digitisation
- Higher consumer expectations

PROCESS

- As the balance of sales move from brick-and-mortar to online, the dynamics of shipping change towards more complexity and less predictability of deliveries
- As a result, application of data analytics and telematics are becoming essential in meeting the higher customer expectations and optimising operations
- Data analytics can be used for e.g. route optimization (faster and cheaper deliveries), improve carrier behaviour and reduce maintenance

- Reconfiguration of operations towards data-driven decision-making will become a key source of competitive advantage



Increased use of alternative vehicles

- Higher consumer expectations
- Tech advances

PROCESS

- Alternative means of transportations emerge as a result of increasing expectations to speed and cost efficiency
- Examples include electric cars, drones and autonomous shipping. The latter more uncertain due to regulatory dependency

- Potential for efficiency gains dependent on future regulations on new technologies



Sources: SME interviews and Monitor Deloitte analysis

Deep dive: Core capabilities impact | Transport & Logistics



Increasing complexity in transportation drives the need for new capabilities to extract value from data in order to stay competitive

Anticipated change

Widespread adoption of vehicle telematics

- Digitisation
- Higher consumer expectations

SKILLS & CAPABILITIES

Rationale for impact

- With continued price pressure and higher consumer expectations, carriers have to build new capabilities to take advantage of data to lower cost and improve their offerings (cf. business model impact)

Implication

- The ability to extract value from data is a key source of competitive advantage both in terms of offerings and profitability and require a shift in capabilities



Labour shortage for drivers and analytic talents

- Demographic change
- Digitisation

INTANGIBLE RESOURCES

- The increasing demand for transportation induces a chronic shortage of drivers much of it attributed to low wages and an ageing workforce
- The increasing use of data analytics across industries intensifies the competition for qualified talent

- Ability to tap into non-traditional workforce pools will be crucial to access sophisticated data analytics competences



Asset sharing through network platforms

- Higher consumer expectations
- Tech advances
- Digitisation

TANGIBLE RESOURCES

- With continued pressure on profitability from lower prices and higher service level expectations, asset sharing become more widespread in order to increase fleet utilization and extend the potential area reach
- Technological advances and digitization reduce coordination costs and broaden the range of possible asset collaborations e.g. through transparent and real-time network platforms offering shippers, drivers and customers visibility into asset capacity and demand

- Asset sharing collaborations enable asset-light models for some players and allow smaller players to compete



Sources: SME interviews and Monitor Deloitte analysis

Impact of megatrends | Construction



Development in construction has traditionally been slow, but the industry seems poised for change as megatrends will likely have a profound impact on multiple parameters

BREAKDOWN OF MEGATREND IMPACT ON INDUSTRY PARAMETERS

Parameter	Main megatrends	Rationale for impact	Implication
<p><i>Business Model</i></p>	<ul style="list-style-type: none"> Tech advances Digitisation Resource scarcity Ethical consumption 	<ul style="list-style-type: none"> New digital technologies, e.g. Building Information Modelling (BIM), Augmented Reality (AR) and Blockchain, enable new offerings and experiences as well as potential for optimizing productivity Sustainability, resilience, connectivity and multi-purpose functionality becoming requirements rather than just desirable features 	<ul style="list-style-type: none"> Demand for innovation in processes, offerings and experiences <p>DEEP DIVE</p>
<p><i>Core Market</i></p>	<ul style="list-style-type: none"> Sociodemographic changes Urbanisation Economic power shift Climate change 	<ul style="list-style-type: none"> Fast growing societal need for large-scale infrastructure assets (e.g. water supply and sanitation) in emerging markets (EMs) Need for affordable housing in urban areas, where the construction process is complex due to space constraints 	<ul style="list-style-type: none"> EMs as main driver of construction growth Need for affordable urban housing <p>DEEP DIVE</p>
<p><i>Core Competencies</i></p>	<ul style="list-style-type: none"> Sociodemographic changes Tech advances 	<ul style="list-style-type: none"> An aging workforce and a shortage of skilled labour is leading to talent scarcity as the industry has been slow to adopt new talent practices, including focus on gender diversity and general talent attraction Necessary capability shift towards digital technology, advanced analytics and international project management skills 	<ul style="list-style-type: none"> War for talent with other industries Low-skilled workers becoming redundant
<p><i>Industry Structure</i></p>	<ul style="list-style-type: none"> Globalisation Blurring boundaries 	<ul style="list-style-type: none"> Increasing consolidation and global orientation of incumbents to tap into international demand for infrastructure megaprojects Firms with strong processes in place and ability to adapt to local markets will prove to be winners, will many others will likely disappear 	<ul style="list-style-type: none"> Increase in global competition Consolidation play with multinational strategy

Sources: SME interviews and Monitor Deloitte analysis

Deep dive: Business model impact | Construction



Megatrends will likely bring about significant changes in the business model of the construction industry, particularly driven by technology

Anticipated change

Adoption of new construction technologies and materials

- Tech advances
- Digitisation
- Resource scarcity

CONFIGURATION OFFERING

Rationale for impact

- Additive manufacturing (e.g. 3D printing) is expected to have a disruptive impact on the construction industry¹, albeit adoption is still very limited and technological development is traditionally very slow in the industry
- With the increasing resource scarcity, e.g. of sand or water for cement production*, and approx. one-third of construction costs attributed to building materials¹, the scope for using advanced building materials is considerable

Implication

- Potential significant productivity gains through new production methods and advanced building materials
- To unlock the potential of new technologies the relevant processes must be adopted across the full value chain, e.g. to enable new ways of collaborating and sharing information

Increasing standardisation and pre-fabrication

- Tech advances
- Sociodemographic changes
- Urbanisation

CONFIGURATION

- Significant talent scarcity and low productivity are major challenges to the industry. To increase productivity, new technologies enable prefabrication of building modules and standardization, which in turn will help simplify construction in space-constrained urban areas. It also offers potential for decreasing project delivery times and reliance on manual processes, while improving margins through remote, mass-production of building modules

- Talent scarcity and the endemic need for margin improvement requires fundamental changes in the construction processes, which is why standardization and pre-fabrication will become increasingly widespread

Enhanced experiences through digital technology

- Tech advances
- Digitisation

EXPERIENCE

- Construction is one of the least digitized sectors, but the use of digital technologies such as BIM and AR can enable construction companies to involve stakeholders, improve planning and detect potential issues upfront
- Blockchain has the potential to automate contract management
- IoT and digital sensors enable the future "smart cities"

- Digital technology can improve operational efficiency and customer satisfaction
- Adopting digital technologies requires new and advanced skillsets

Sources: ¹World Economic Forum (2016); ²Deloitte (2016); SME interviews and Monitor Deloitte analysis

*Typical water-to-cement ratio for concrete varies from 0.35 to 0.4, excl. water added during curing, hence more than 0.35 ton water consumed per ton of concrete¹

Deep dive: Core market impact | Construction



Notable shifts in the core market of construction firms may be expected, as global competition intensifies and projects become larger and more complex

Anticipated change

Increase in global competition

- Sociodemographic changes
- Economic power shift
- Globalisation

GEOGRAPHY

Rationale for impact

- With 65% of the next decade's growth in construction expected to be in emerging countries¹, more construction firms will pursue new geographies
- Global competition will increase, as large multinational firms, e.g. Chinese incumbents, capitalize on scale and cost advantages to secure construction contracts abroad

Implication

- Firms in markets characterized by a high degree of fragmentation are impacted unfavorably on their ability to access foreign markets
- Firms with strong processes and ability to adapt their business model to local market conditions will likely prove to be the winners



Larger and more complex projects

- Urbanisation
- Economic power shift
- Globalisation

CUSTOMERS

- Scale and complexity of projects are expected to increase due to urbanisation (leading to complex constructions in space-constrained areas) and the economic growth in EMs
- Infrastructure will be of particular importance, as aging infrastructure in developed markets demand maintenance, upgrading or replacing to match demographic changes, while EMs have an urgent need for infrastructure assets

- Scale will be key to meet demand for international megaprojects
- Private-Public-Partnerships will be needed for infrastructure construction projects, as the vast "infrastructure gap" cannot be bridged by public-sector money alone*



Increasing demands to offerings

- Urbanisation
- Ethical consumption
- Reg. scrutiny

OFFERINGS

- With urbanisation, demands for better utilization of urban space will increase
- Demands for sustainability and resilience become increasingly widespread, particularly for future "green cities"
- Ensuring that living and work environments are healthy and safe is a requirement, as certain construction materials, e.g. asbestos, are outlawed in many countries

- Development of multi-purpose buildings and affordable housing for space-constrained urban areas will be key
- Integrating sustainability, health and safety in offerings as well as reducing waste becomes imperative



Sources: ¹World Economic Forum (2016); SME interviews and Monitor Deloitte analysis
























*According to the World Economic Forum¹, USD 1tn annual investments are needed to close the global infrastructure gap

Impact of megatrends | Renewable Energy



A confluence of forces is driving renewable energy forward, and the shift of renewables into the mainstream is likely irreversible

BREAKDOWN OF MEGATREND IMPACT ON INDUSTRY PARAMETERS

Parameter	Main megatrends	Rationale for impact	Implication
 <i>Business Model</i>	<ul style="list-style-type: none">  Indiv. empowerment  Tech advances  Ethical consumption  Reg. Scrutiny 	<ul style="list-style-type: none"> • Increasing demand for resilience and self-sustainability, which is causing a shift from passive consumption to active participation • Technological advances are enabling radically new business models based on distributed energy, microgrids and storage 	<ul style="list-style-type: none"> • Disruption of current business models • Increasing focus on customer experience 
 <i>Core Market</i>	<ul style="list-style-type: none">  Economic power shift  Climate change  Resource scarcity  Ethical consumption  Regulatory scrutiny 	<ul style="list-style-type: none"> • Rapidly growing demand for distributed renewable energy generation and microgrids in emerging markets to ensure access and resilience • Renewable energy is becoming mainstream, as demand is driven by corporate policies, regulatory directives and attractive economics 	<ul style="list-style-type: none"> • The shift to renewables is likely irreversible and outlook is very strong 
 <i>Core Competencies</i>	<ul style="list-style-type: none">  Digitisation  Tech advances  Indiv. empowerment 	<ul style="list-style-type: none"> • Grid integration of intermittent power sources requires utilities and system operators to develop advanced capabilities for integrating power output while balancing supply and demand in real time • Agility and customer-centricity will be key to drive innovation 	<ul style="list-style-type: none"> • Adoption of technology for demand and supply management is key • Mindset shift required 
 <i>Industry Structure</i>	<ul style="list-style-type: none">  Digitisation  Indiv. empowerment  Blurring boundaries 	<ul style="list-style-type: none"> • Competitive landscape will shift, as technology companies such as Tesla, Google and Amazon expand product systems for the 'connected home' • Big, traditional power plants may come under pressure, as a "grid independence" movement is emerging with distributed energy and storage 	<ul style="list-style-type: none"> • New entrants offer connected services • Dependence on the grid is decreasing 

Sources: SME interviews and Monitor Deloitte analysis

Deep dive: Business model impact | Renewable Energy



The rise of distributed energy could potentially turn the energy industry on its head, while expectations to offerings and experiences are calling for customer engagement

Anticipated change

The dawn of distributed energy generation

- Tech advances
- Climate change
- Reg. scrutiny

CONFIGURATION

Rationale for impact

- Cost of electricity, environmental concerns and demands for resilience contribute to the rise of distributed energy
- Distributed energy, coupled with storage solutions and microgrids, enables greater resilience and protection against outages by decreasing dependency on the main grid
- Leasing models, tax subsidies, and regulatory mandates fuel adoption of distributed solar for residential customers

Implication

- Utilities will have to maintain and upgrade costly infrastructure although revenue from grid consumption decreases
- Flexible consumption models and smart power infrastructure will be key
- The current integrated one-way model will become multidirectional as consumers also become producers

A shift towards connected product systems

- Individual empowerment
- Digitisation
- Hyperconnectivity

OFFERING

- Product systems are expanding as consumers have higher expectations to services and connected solutions
- Digital technology is enabling the rise of the “connected home” movement, in which home owners can control power and heat through one, integrated platform that aggregates a multitude of solutions and services

- Technology companies, such as Google, Amazon and Tesla are rapidly developing connected product systems in a play to own the “connected home” platform
- Utility companies have an opportunity to expand service offerings through connected platforms

Greater focus on customer interaction

- Individual empowerment
- Ethical consumption

EXPERIENCE

- Connected technology, microgeneration, and advances in energy storage are helping empower a customer base, which traditionally has been slow to take control of their energy use and supply
- Consumer interest in the “connected home” is increasing¹, which will expand the potential value chain, but requires a broader, more lasting relationship with the customer beyond that of a commodity supplier

- Transition from passive consumption to active customer participation, within both household consumers and businesses
- Understanding customer needs and preferences will be key to meeting customer expectations

Source: ¹Deloitte (2017); SME interviews and Monitor Deloitte analysis

Deep dive: Core market impact | Renewable Energy



Regulatory reforms, sustainability programs, and the rise of developing countries are powering a very positive outlook for growth in renewable energy

Anticipated change

Microgrids powering growth in rural areas

- Changing demographics
- Tech advances
- Economic power shift

GEOGRAPHY

Sustainability is becoming a requirement

- Resource scarcity
- Ethical consumption
- Reg. scrutiny

CUSTOMERS

Policy uncertainty in developed countries

- Economic power shift
- Polarization

GEOGRAPHY

Rationale for impact

- Today, approximately 1,2 billion people – or ~17% of the global population – lack access to electricity, mainly in sub-Saharan Africa and Asia¹
- The combination of microgrids and renewables offer a viable solution for rural areas where there is currently no grid
- Innovative solutions that don't require special expertise to set up or manage are already being deployed in India, Nepal and several African nations²

- Regulatory reforms support the transition to renewables, with e.g. 29 states in the US having adopted mandatory renewable portfolio standards, requiring utilities to supply a certain percentage of electricity from renewable sources
- Corporations are increasingly committing to renewables as part of corporate sustainability programs, spreading to small- and mid-sized companies as sustainability requirements are implemented across supply chains³

- Currently, China alone is responsible for over 40% of global renewable capacity growth, and also the world market leader in hydropower, bioenergy, and electric vehicles¹
- Despite policy uncertainty, the US remains the second-largest growth market for renewables¹
- Growth in EU is hampered by overcapacity and high policy uncertainty beyond 2020

Implication

- Renewable energy solutions may follow a similar trajectory as mobile phones, growing fastest in areas where solution providers do not have to contend with existing infrastructure
- Significant growth potential and social impact in eradicating 'energy poverty' in developing countries

- Increasing demand for renewable energy driven by regulations and concerns about climate change
- Corporations are pre-emptively committing to renewables to avoid imminent carbon pricing and to boost sustainability efforts

- Market and policy developments in China will have global implications for demand, supply, and prices
- Long-term commitment and policy predictability is key to unlocking growth in EU markets

Sources: ¹International Energy Agency (2018); ²Deloitte (2016); ³Deloitte (2018); SME interviews and Monitor Deloitte analysis

Section 3

Industry opportunities and threats



Having gained an understanding of the structural impacts for each selected industry in the previous section, this section turns to the consequences hereof. We identify the main opportunities and threats per industry on a global level and provide perspectives for Greater Copenhagen. As we only cover the impact of the megatrends the observations of this section should not be confused with the full strategic agenda of the respective industries which would differ substantially.

Having understood the consequences on an industry level the next section extracts themes across industries.

Opportunities & Threats | Life Sciences



GC has significant opportunities to spearhead cutting-edge development of processes and offerings, although the threat of talent scarcity may be more pronounced

Impact	Global	Greater Copenhagen
 <p>Opportunities</p>	<ul style="list-style-type: none"> • Real World Evidence offers significant potential for improving R&D productivity and outcomes as well as evaluating the efficacy of treatments • Moving beyond the pill with holistic, customer-centric offerings for life-style diseases may expand the product system, increase customer engagement and facilitate data collection through digital technology • Adopting cutting-edge technology enables development of revolutionary offerings, such as biologics, combination products, or precision medicine • Establishment of collaborative networks across industries and sectors may help improve R&D productivity and innovation 	<ul style="list-style-type: none"> • GC has a unique opportunity to lead the shift towards RWE due to the availability of high-quality longitudinal patient data in DK, provided that sufficient collaboration in triple helix networks* can be achieved • Access to high-quality public databases and specialised research facilities enable cutting-edge research in e.g. precision medicine and preventive solutions • As the home-market is small but very advanced, and consumers are very engaged and connected, GC may have a significant opportunity in serving as a “proof-of-concept” market for new offerings and ways of interacting with consumers
 <p>Threats</p>	<ul style="list-style-type: none"> • Shortage of skilled workers due to global competition with other industries for STEM talent • Rising consumerism requires fundamental shift in mindset and focus on proving value for money as patients become more engaged and informed • New technology entrants own the consumer link and has access to real world patient-generated data, e.g. through wearables or smartphone apps • Price pressure from policy makers due to increasingly heavy burden on public health systems as well as competition from generics and biosimilars • Regulatory complexity may impede innovation and require significant resources particularly for global companies 	<ul style="list-style-type: none"> • The threat of talent scarcity may be even more pronounced in GC, as the national education system cannot meet the demand and attracting and retaining international talent is particularly challenging due to taxation and immigration policies • As the LS industry in GC is very global by nature, other threats such as rising consumerism, new competitors and price pressure are expected to be of equal importance to GC, although the trends may not be as pronounced in Denmark

Sources: SME interviews and Monitor Deloitte analysis

*Triple helix networks are comprised by academia, companies and the public sector

Opportunities & Threats | Financial Services



Opportunities for tapping into digitisation are abundant, but regulatory complexity is a threat to innovation, particularly in GC



Impact	Global	Greater Copenhagen
 Opportunities	<ul style="list-style-type: none">• Automation of processes offer great potential for cost efficiencies and faster customer service• New technologies, such as blockchain, offer vast opportunities for new business models based on decentralization and platform economics• Digitisation enables customization of offerings and services thereby improving customer experiences• Data and advanced analytics enable development of better and more targeted solutions to customers• Digital ecosystems can enhance competitiveness through access to new revenue streams and innovative solutions	<ul style="list-style-type: none">• Technology adoption among consumers is very high in GC with a nearly cashless society, and the digital infrastructure is highly developed, which enables opportunities for development of cutting-edge user-centered digital solutions• Political sentiments in the EU are pushing for regulatory harmonization, which will lower entry barriers and enable companies in GC to internationalize across the EU
 Threats	<ul style="list-style-type: none">• New tech-savvy competitors challenge the core value proposition of established players, targeting younger segments in particular, with solution architecture based on modularity optimized for speed in contrast to the interdependent architecture of incumbents that focuses on reliability• Fragmentation of value chains as new technology-enabled solutions don't require end-to-end backend activities• New technologies, such as blockchain, pose a fundamental threat to banks' role as intermediaries in value transfers• Regulatory pressure is increasing compliance complexity and cost of operations, which impacts smaller players harder than incumbents	<ul style="list-style-type: none">• Fintech startup ecosystem in GC is facing significant competition from nearby metropolitan areas, such as London, Amsterdam, and Berlin, where policy makers have made significant efforts for making the regulatory environment more flexible and conducive to new digital business models, e.g. through sandboxing initiatives for fintech solutions• With a more open European market and reduced entry barriers due to regulatory harmonization, competition will likely intensify, potentially leading to international incumbents entering the Danish market• Time-consuming regulatory approval processes increase businesses' time-to-market, hence threatening innovation

Sources: SME interviews and Monitor Deloitte analysis

Opportunities & Threats | Software & IT



As the world is becoming increasingly digital, the opportunity space is vast, although certain threats should be addressed



Impact	Global	Greater Copenhagen
 Opportunities	<ul style="list-style-type: none">• Growth opportunities across industries and sectors due to the proliferation of technology and increasing digitisation and connectivity• Convergence of physical and digital worlds, through e.g. IoT, are driving demand for software and IT solutions to connect and enable hardware• Extensive digitisation and connectivity increase the demand for advanced cyber security solutions and advisory• Cross-industry collaborative networks enable software & IT companies to find application areas in other industries• Economic growth in developing countries are bringing large groups of people online, thus expanding the addressable market	<ul style="list-style-type: none">• Access to highly qualified IT specialists is relatively good in GC, with both a generally high educational level as well as deep expertise within emerging technologies• A strong expertise in developing user-oriented applications of software and technology facilitates a perception of GC as an innovative development centre
 Threats	<ul style="list-style-type: none">• Increasing attention to cyber security and data privacy will likely lead to greater compliance complexity• Global war for specialised talent, as new technologies require increasingly advanced expertise and other industries are looking to tap into the same talent pool• Customer expectations and competition from large incumbents with vast product systems make it increasingly hard to monetize software	<ul style="list-style-type: none">• Local industry, particularly in the Zealand region, is characterised by small players with limited reach and resources, which makes the industry vulnerable to global competition from large platform providers• Other threats are similar to the global level, due to the global nature of the industry

Sources: SME interviews and Monitor Deloitte analysis

Opportunities & Threats | Transport & Logistics



Technological advances and digitisation offer large opportunities for optimization, as the industry is facing threats of fragmentation and increasing customer expectations



Impact	Global	Greater Copenhagen
 Opportunities	<ul style="list-style-type: none">Optimizing logistics based on the use of IoT, automation and advanced analytics can improve quality of service and drive cost efficiencies, e.g. through enhanced capacity utilization and route planningNetwork platforms and sharing of assets enable diffusion of delivery ownership along the value chain, allowing smaller players to competeIncreasing transportation demand due to globalisation, emerging middle class in developing countries, digitisation and changing consumption patternsAlternative means of transportations, such as electric vehicles, drones, etc., offer potential for improved speed and cost efficiency	<ul style="list-style-type: none">GC is a very mature market for e-commerce, with a critical mass for developing and testing innovative delivery solutions for last-mile deliveries to end-consumersThe market in GC is characterised by high compliance requirements and quality standards, which is a competitive advantage for specialised transport solutions, such as cold chain logisticsEstablishment of the Femern Belt tunnel could potentially increase the strategic importance of GC as the gateway between Scandinavia and the European continent, while strengthening transport connections to key export markets
 Threats	<ul style="list-style-type: none">Fragmentation of delivery, i.e. smaller deliveries coupled with higher frequency, due to digitization and changing consumption patterns is increasing complexity and cost of deliveriesIncreasing customer expectations to speed and costs require high flexibility and scale while increasing price pressurePotential labour shortages due to higher education levels and demographic changesSignificant geopolitical uncertainties regarding energy and trade policiesTechnology companies, e.g. Amazon, challenge established players with logistics models optimized for end-consumer deliveries of retail goods	<ul style="list-style-type: none">The industry in GC face the same threats as the global industry, with fragmentation of delivery, increasing customer expectations and potential labour shortages being key concerns

Sources: SME interviews and Monitor Deloitte analysis

Opportunities & Threats | Construction



The construction industry faces both opportunities and threats related to technology, as well as notable threats in terms of talent and resource scarcity



Impact	Global	Greater Copenhagen
 <p>Opportunities</p>	<ul style="list-style-type: none"> • Adoption of new technology is a matter of <i>when</i> rather than <i>if</i>, which can lower costs, speed up construction and improve quality and safety • Given that wafer thin margins are endemic in the industry, even small improvements in productivity through greater automation and digitalisation may have a large impact • Standardisation and prefabrication offers potential for productivity improvement and faster project delivery • Adoption of advanced building materials and focus on sustainability and multi-purpose buildings offer potential for competitive differentiation • Emerging markets offer significant growth opportunities and megaprojects 	<ul style="list-style-type: none"> • Adoption of digital technology is high in the GC region, and there are opportunities for spearheading the development of new processes and offerings that may drive industry innovation • High environmental awareness in the region may offer opportunities for leading the innovation in sustainable and recycled materials and development of “green cities” with a strong focus on liveability • Standardisation and prefabrication is impeded by a relatively high influence of architects on the construction process, compared to other markets
 <p>Threats</p>	<ul style="list-style-type: none"> • Shortage of skilled labour is a major threat to the industry, as it is being hit by multiple forces, e.g. an aging workforce, a switch towards a knowledge-economy, global competition with other industries for talent, and an unattractive perception by younger generations • Window of opportunity for integrating technology across business models may be small – late movers risk being left behind • As the industry in general is largely fragmented and very home-market oriented, many firms will likely disappear as market changes require scale • Regulatory scrutiny and resource scarcity may threaten current processes as specific materials/resources risk being outlawed or depleted 	<ul style="list-style-type: none"> • Labour shortages are even more profound in the GC region, as the national education level is very high, resulting in even greater challenges of attracting new workers • Industry is highly fragmented with many small firms, which makes the threat of international competition very high • Many small firms, particularly in the Zealand region, are challenged by a lack of resources and willingness to invest in new technology and digitalisation, which is a threat to future competitiveness

Sources: SME interviews and Monitor Deloitte analysis

Opportunities & Threats | Renewable Energy



Technology advances offer great opportunities in renewable energy, while traditional energy retail business models are under severe pressure

Impact	Global	Greater Copenhagen
 Opportunities	<ul style="list-style-type: none">• Distributed renewable energy services have enhanced value propositions through cost reductions, increased resilience, and bundled product offerings such as solar-plus-storage• Enabling peer-to-peer trading of micro-generated excess energy through transactive energy platforms based on blockchain technology can potentially accelerate the transition to a distributed renewable energy future• The 'connected home' trend offers the opportunity for energy providers to mine impactful insights from the data that the technology delivers• Declining costs of technology are making renewables more viable as replacements for traditional power sources, as e.g. residential solar and battery storage could become cost-competitive with grid electricity by 2020¹	<ul style="list-style-type: none">• Biopower is a key technology in the Danish renewable energy industry, although the current technology, based on combustion of waste and biomass, is not considered to be very sustainable. A shift in technology to gasification could potentially be a major opportunity, as this would be more effective and sustainable, although the technology is not competitive yet• Research and development is particularly strong in DK, and the country is a world leader in renewable energy adoption³• Consumers are very environmentally aware and technologically advanced, which makes the market highly suitable for piloting new, customer-centric business models
 Threats	<ul style="list-style-type: none">• The traditional energy retail business model is under threat due to the rise of distributed energy and storage, as these developments enable customers to become micro-generators who sell excess energy back into the grid• Grid integration of intermittent renewable sources remains a challenge, although technological advances are rapidly easing the integration• Highly regulated markets impede the growth of renewable energy, as customers do not have free energy retail choice• Policy uncertainty is a threat to the short-term growth of renewable energy, although it is unlikely to derail the long-term transition to renewable energy	<ul style="list-style-type: none">• Renewable energy faces threats that mainly require solutions at a national level, which will also have implications at GC level• Highly developed infrastructure and near-perfect energy supply through the main grid leaves little incentive for consumers to adopt distributed energy solutions• Highly regulated market with an inflexible tariff system does not facilitate active consumer participation in the market, e.g. as both consumers and producers of energy• Discontinuation of subsidies removes the short-term economic incentive, which is why growth in renewables is expected to stagnate beyond 2020², although a following rebound is to be expected as market dynamics kick in

Sources: ¹Deloitte (2018); ²Danish Energy Agency (2017); ³International Energy Agency (2018); SME interviews and Monitor Deloitte analysis

Section 4

Cross-industry growth themes

Having understood the consequences of megatrend impact on an industry level in the previous section, this section extracts the most powerful commonalities across industries and articulates strategic themes relevant for all. Specific barriers for Greater Copenhagen to be able to address the themes are provided.

Since the themes are constructed from how the megatrends from section 1 will impact selected industries, some will pass-through unscattered, as is the case with the theme 'Fighting a global war for talent' which is directly linked to the megatrend 'Talent scarcity'. In other cases, the themes are more complex compositions.

Cross-industry growth themes (1/3)

Looking across the opportunities and threats for the selected industries, several growth themes emerge as a consequence of global megatrends

	Fighting a global war for talent	Competing in collaborative networks	Exploring pockets of growth
What	<ul style="list-style-type: none"> Attracting and retaining skilled workers are major challenges across industries, particularly for companies in rural areas Competition for talent cuts across industries 	<ul style="list-style-type: none"> Collaborative networks and ecosystems emerge for incumbents to be able to compete Networks provide access to technical and innovative skills or sharing of assets 	<ul style="list-style-type: none"> Blurring industry boundaries and technological advancement both enable and require exploration of new growth opportunities, often outside the core
Why	<ul style="list-style-type: none"> New digital skillsets are required, leading to global competition for the same talent pool Urbanization and an aging workforce is putting pressure on talent pipelines 	<ul style="list-style-type: none"> The convergence with digital technology requires radically new competences Mounting performance pressure calls for rapid innovation and collaboration 	<ul style="list-style-type: none"> Accelerating pace of change is compressing product and corporate life cycles New technologies enable new areas of growth, calling for radical innovation
Implication	<ul style="list-style-type: none"> Access to talent is a competitive advantage New working models, e.g. crowdsourcing and virtual working becomes pervasive 	<ul style="list-style-type: none"> Potential for improvement of productivity and innovation through networks Breakup of value chains as the need for end-to-end ownership diminishes 	<ul style="list-style-type: none"> Shifting profit pools as traditional industry boundaries are blurring Opportunity to focus on small niche areas with high growth potential
GC barriers*	<ul style="list-style-type: none"> Inflexible and fragmented education system Taxation and immigration regulations impede ability to attract and retain international talent 	<ul style="list-style-type: none"> No direct barriers, however, there is a need for facilitation and knowledge-sharing to promote the use of collaborative networks Too many dispersed cluster initiatives may make the impact suboptimal compared to having few, coordinated and focused efforts 	<ul style="list-style-type: none"> Limited access to risk-willing capital Public procurement is hesitant to shift demand towards new, innovative solutions Regulatory rigidity and bureaucracy inhibit radical innovation

Sources: SME interviews and Monitor Deloitte analysis

*GC barriers are based on stakeholder interview

Cross-industry growth themes (2/3)

Looking across the opportunities and threats for the selected industries, several growth themes emerge as a consequence of global megatrends

Embracing digital transformation

Overcoming compliance complexity

What

- Increasing degree of digitization of processes, products and services
- Data-driven operations allow greater customization of offerings

- Increasing compliance complexity with differences in regulatory frameworks and processes across borders
- Uncertainty on how policies will evolve in the short to medium term increases complexity, particularly relevant in capital intensive industries

Why

- Increasing expectations to product customization, service levels, and prices makes digitization key to serving customer needs and wants
- Digital technologies are a key operational cost efficiency lever

- New business models challenge existing regulatory frameworks
- Regulations are not adapted to a digital and rapidly changing environment, which requires regulatory flexibility and agility

Implication

- Innovation across the value chain with widespread shifts in value proposition as industries converge with digital technology
- Automation and digitalization are key to maintain productivity and competitiveness

- Highly regulated markets and policy uncertainty impede growth
- Regulations protect incumbents due to high cost of compliance
- High regulatory requirements may facilitate improved quality and international competitiveness in less demanding markets

GC barriers*

- Lacking public commitment e.g. through public procurement
- Public data pools, e.g. health and medical data, are not streamlined and easily-accessible
- Many SMEs are slow to invest in new technology and competencies, hence the Zealand region face greater barriers for digital transformation

- Lack of harmonisation of compliance policies across borders (national and international)
- Insufficient information on compliance measures
- Rigid regulations with low flexibility and agility

Sources: SME interviews and Monitor Deloitte analysis

*GC barriers are based on stakeholder interview

Cross-industry growth themes (3/3)

Looking across the opportunities and threats for the selected industries, several growth themes emerge as a consequence of global megatrends

Striving for international scale or specialization

Transitioning to sustainability

What

- Businesses need to rapidly achieve scale or become highly specialized to maintain international competitiveness
- Home-market oriented businesses face pressure, as international competition increases and growth potential is often found abroad

- Sustainability is integrated in all elements of business across a wide variety of industries, as it serves as a way of 'future-proofing' businesses and building brands

Why

- Rapid internationalization is made possible by technology and increasing flows of trade, information and capital
- Mounting performance pressure requires start-ups or small businesses to scale or specialize faster than ever before

- Increasing customer demand for sustainable products and services offers growth potential
- Expectations of sustainability becoming a regulatory requirement in the near future drive upfront transition

Implication

- Access to international markets is key to competitiveness and growth potential
- Small-scale, local businesses face increasing competitive pressure, as barriers to entry diminish and value chains fragment

- The transition towards sustainable solutions offers vast opportunities as well as significant challenges for businesses and policy makers
- Market development is very sensitive to public policies

GC barriers*

- Regulatory frameworks are not aligned across borders
- A small home market requires business to go international
- Limited access to funding and experienced investors make it hard for start-ups to become scale-ups

- Policy uncertainty is a barrier for long-term sustainability investments
- Regulatory complexity impedes innovation of new models, e.g. within circular economy and distributed energy
- Roll-back of subsidies for renewable energy decreases incentive to early adoption until market dynamics kick in at a later stage

Sources: SME interviews and Monitor Deloitte analysis

*GC barriers are based on stakeholder interview

Section 5

Regional reflections on key themes for future growth conditions

So far, this report has focused on the expected impact of global megatrends on six selected industries and the opportunities and threats that will consequently emerge. Looking at these opportunities and threats, seven growth themes that cut across the industries have been identified, as presented in the previous section. While all seven themes are impactful from an industry point of view, not all of them are directly actionable by public institutions. Through individual interviews with a range of key stakeholders in Greater Copenhagen, three of the themes have consistently been highlighted as the most critical to address, which will be elaborated in this section with specific regional reflections on issues and potential strategic focus areas.

Regional reflections | Overview

Of the identified cross-industry growth themes, three stand out as key strategic themes for Greater Copenhagen to seize future growth potential

So far, this report has focused on the expected impact of global megatrends on six selected industries and the opportunities and threats that will consequently emerge. Looking at these opportunities and threats, seven growth themes that cut across the industries have been identified, as presented in the previous section. While all seven themes are impactful from an industry point of view, not all of them are directly actionable by public institutions, according to national competitiveness theory*. Furthermore, with the public focus on job creation as a key measurement of growth in mind, only some of the cross-industry themes are key to the future strategy of GC. Lastly, individual interviews with a range of key stakeholders** in GC, have highlighted three of the themes as the most critical to address in a GC context.

The talent and workforce agenda is of pivotal importance for the future competitiveness of GC. Being a very broad agenda with multiple components, the issue is not only highly complex to solve, it also takes on different characteristics across the regions in GC. For the Capital region, increasing competition with metropolises across the globe is a key challenge, as the region itself cannot provide a sufficient amount of specialised talent to meet demand. For the Zealand region, urbanisation is driving an outflow of skilled labour and highly educated inhabitants, leading to a significant regional competence gap. Addressing the theme of a global talent war through strategic focus areas such as liveability, competence development and global awareness of the region may also serve as an enabler for other growth themes such as the emergence of collaborative networks and clusters, exploration of new pockets of growth, as well as the achievement of international scale and specialization.

Helping businesses overcome compliance complexity by reducing friction is a highly actionable lever for public institutions to ensure the optimal conditions for growth. Particularly within GC there is a need for greater coherence and seamlessness for the region to truly manifest itself as one, integrated business region. The strategic theme of overcoming compliance complexity is also closely related to the talent and workforce agenda, as reducing regulatory friction and administrative borders can facilitate the mobility of talent across the entire businesses region as well as adjacent regions (e.g. Nordic countries, Northern Germany, etc.), thereby enhancing the growth conditions in GC.

The exploration of growth opportunities in highly specialized niche areas is also a key strategic theme for GC, although it is of different nature than the two other themes, as it is not as directly actionable by public institutions. With a small home-market, sophisticated consumers, a highly educated workforce, and high quality standards, however, GC has significant potential for taking on the role as an incubation market for development and commercialization of new, innovative solutions and business models in a wide range of fields. The strategic focus areas for GC to enable this theme are primarily related to ensuring a flexible and agile regulatory environment, e.g. through sandbox initiatives, facilitating access to capital, and empowering small- and mid-sized enterprises to specialize and scale. Seizing the potential of this theme is also closely interlinked with other growth themes, as it requires access to top talent, a high level of digitalization and technology adoption, as well as a focus on internationalization and specialization.

By focusing the spotlight on these three key strategic themes for GC to meet the future impact of global megatrends, as well as defining if/how the issue and strategic focus areas may take on different characteristics between the Capital region and the Zealand region, this section provides an overall frame and direction for the regional growth strategy process in GC.

*See appendix C for an explanation of the public solution space

**See appendix D for a list of interviewees

Regional reflections | Key strategic themes for GC (1/3)

Addressing the global war for talent is a key strategic theme for Greater Copenhagen, with distinct characteristics for the two regions

Theme 1: Fighting a global war for talent

	Capital Region	Zealand region
Issue	The region is not expected to be able to provide a sufficient amount of the highly specialised talents in STEM-areas that are needed in certain sectors. Furthermore, the region may also be negatively affected by a mismatch between supply and demand of the highly educated workforce as well as fierce competition with other metropolises.	The region may be negatively affected by a combination of factors: a lower level of education in the private sector and an ongoing urbanisation, where inhabitants seeking higher education leave the region. However, the proximity to the capital region, quality living environment and cheaper housing is considered an advantage.
Liveability	<ul style="list-style-type: none"> Continue to integrate regional economic development strategies with strategies to increase liveability, including the quality of life, efficiency/seamlessness of public services, accessibility and infrastructure in the region, environmental standards, etc. 	<ul style="list-style-type: none"> Formulate a regional strategy on liveability as a lever to attract and retain inhabitants who are seeking a different quality of life and who potentially constitute a pool of skilled work force. A regional strategy may be regionally coordinated, but locally executed
Addressing competence gaps	<ul style="list-style-type: none"> Support overall reform of vocational education and training, including opportunities for fast track in achieving skill levels Provide for alternative, even digital means, of supplying education, including vocational training, that reaches target groups Support infrastructure measures that increase connectivity in GC 	<ul style="list-style-type: none"> Invest disproportionately compared to competing regions
Global awareness	<ul style="list-style-type: none"> Support reform of higher education reform prioritizing STEM 	<ul style="list-style-type: none"> Identify clear geographic target areas for attracting and retaining top international talents in critical sectors (e.g. Life Sciences) Concerted efforts in public-private partnerships for promoting Greater Copenhagen globally Continuous review of attraction and retention drivers, including tax schemes

Sources: Stakeholder interviews and Monitor Deloitte analysis

Regional reflections | Key strategic themes for GC (2/3)

Overcoming compliance complexity is a key theme to address in Greater Copenhagen, but requires a concerted effort to ensure the optimal conditions for future growth

Theme 2: Overcoming compliance complexity

Capital Region and Zealand Region

Issue

Seen from a business perspective, current administrative borders and parallel institutional set ups* are obsolete and inefficient. The coherence of the Greater Copenhagen area is relatively low, blurring the picture of one strong business region. There is a need for an approach in all of Greater Copenhagen that to a far larger extent transcends administrative borders. Current differences in administrative procedures, duplication of efforts and competition between public institutions increases complexity, and hinders the exploitation of the full potential of Greater Copenhagen as one, seamlessly integrated and globally competitive business region.



Strategic focus areas

Supporting compliance

- Streamline approval processes and communications across administrative borders to maximize service levels for businesses
- Simplify and standardise administrative procedures at municipal level to minimize the burden on the business environment
- Consider to integrate/merge all business related efforts in GC; including business support organisations

Streamlining regulations

- Focus on minimizing friction by streamlining regulations across all of Greater Copenhagen
- Align regulations with international standards to reduce cross-border friction
- Avoid excessive uncertainty around policy making by aligning to pace of competing regions
- Avoid duplication of regulatory schemes between regions and between regional and national level

Regional reflections | Key strategic themes for GC (3/3)

Exploring pockets of growth is a key strategic theme with high potential for both regions in Greater Copenhagen

Theme 3: Exploring pockets of growth

	Capital Region	Zealand region
Issue	Risk of missing out on significant growth opportunities that may emerge in niche areas and from different business models. These opportunities may arise in a range of existing and mature sectors and is expected to be driven by application of new technologies. The ability to commercialize and scale such specializations will be key to future growth due to the limited home-market size.	Digitalization and innovation are key challenges in the region, particularly within the service sector, which hinders the exploration of new growth opportunities. Working with specialization areas rather than existing industry models may hold significant potential for the region to improve its competitiveness within niche areas.
Strategic focus areas	<ul style="list-style-type: none"> • Support sandboxing initiatives*, i.e. making regulatory requirements more flexible and agile in a specific area, to enable innovation and exploration of new growth areas and business models • Focus efforts on niche areas with high local expertise and significant growth potential that requires flexible regulation to develop new solutions 	
	<ul style="list-style-type: none"> • Adopt aggressive initiatives, e.g. including taxation schemes 	
	Sandbox regulations	<ul style="list-style-type: none"> • Work with local SMEs to raise the competence levels within digitalization and innovation • Identify and support niche areas with high expertise and growth potential by connecting relevant stakeholders and institutions • Help SMEs gain international market access with few resources, e.g. through public-private partnerships
Empowering SMEs	<ul style="list-style-type: none"> • Support capital provision and attractive framework conditions for investments in start up and growth companies to facilitate access to risk-willing growth capital • Facilitate access to national capital sources and schemes where relevant (instead of developing parallel and less effective schemes) • Provide kick-off support for business driven clusters and collaborative networks, also in less knowledge intensive industries 	
Capital infrastructure		

Sources: Stakeholder interviews and Monitor Deloitte analysis

*Examples of regulatory sandboxes include recent initiatives in the UK within both Life Sciences and financial services, allowing firms to test innovative products, services or business models in a live market environment, reducing time and cost of getting innovative ideas to market

Appendices

Appendix A

Industry selection method

Appendix A | Industry selection method

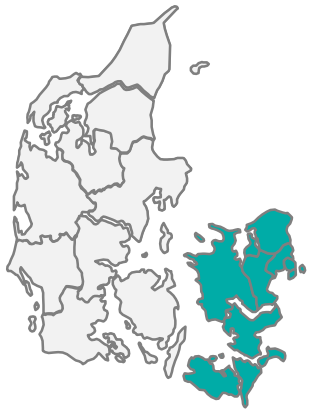
Greater Copenhagen is treated as a subset of industries, for which two methods are combined to identify specific industries for in-depth analysis of megatrend impact

Looking at GC as a subset of industries...

SCOPE

In this report, Greater Copenhagen is treated as a subset of industries within the geographically defined area.

To reach a fitting depth, the industries are analysed both on a global and regional level.



...we combine two approaches to get a more complete view of the impact from megatrends on the industries...

INDUSTRY POTENTIAL MAPPING (appendix B)

Based on methods from KRAKA and Deloitte's *Small Great Nation* project, a potential map has been created for Greater Copenhagen. The map covers 56 industries in Greater Copenhagen and indicates the relative position of strength and expected demand for the industries' products in the future (i.e. the growth potential).

Data points for Greater Copenhagen are derived from national data:

- Industry growth potentials assumed at level with national estimates
- Position of strength is based on GVA* for Denmark adjusted for relative employment proportions across industries in Greater Copenhagen

MEGATREND IMPACT MATRIX (p. 16)

To complement the Greater Copenhagen potential map, a matrix of megatrends and industries is introduced to provide perspectives on the individual impacts. The impact is assessed on a global industry level for deeper insights and focuses on the megatrend impact on business performance, i.e. revenue, costs and profitability.

...and select specific industries for deep dive analyses to cover in-depth perspectives

INDUSTRY DEEP DIVE

The potential map and the matrix include all industries. In order to cover more in-depth perspectives, a number of industries are selected for further analysis. The selection is based on a combination of different criteria:

1. Significant megatrend impact, as identified in the megatrend-industry matrix
2. Distinctive positions of strength and potential, as indicated by the potential map
3. Industry of particular political interest, as suggested by Greater Copenhagen decision makers

The industry selection should not be interpreted as "pick the winner" for preferential treatment, but rather a selection of industries for which there is a particular need for greater insights into the potential impact of megatrends and the implications hereof.

*GVA = Gross Value Added

Appendix B

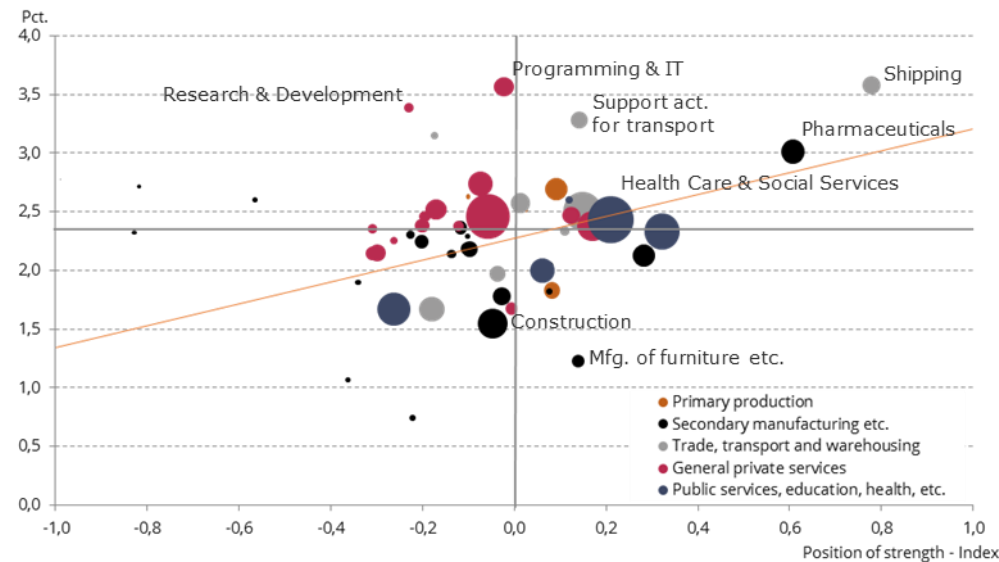
Industry strength and potential mapping

Appendix B | Industry strength mapping – DK vs GC

Greater Copenhagen closely mirrors the national potential map with particularly strong positions in shipping and pharmaceuticals

DK Denmark

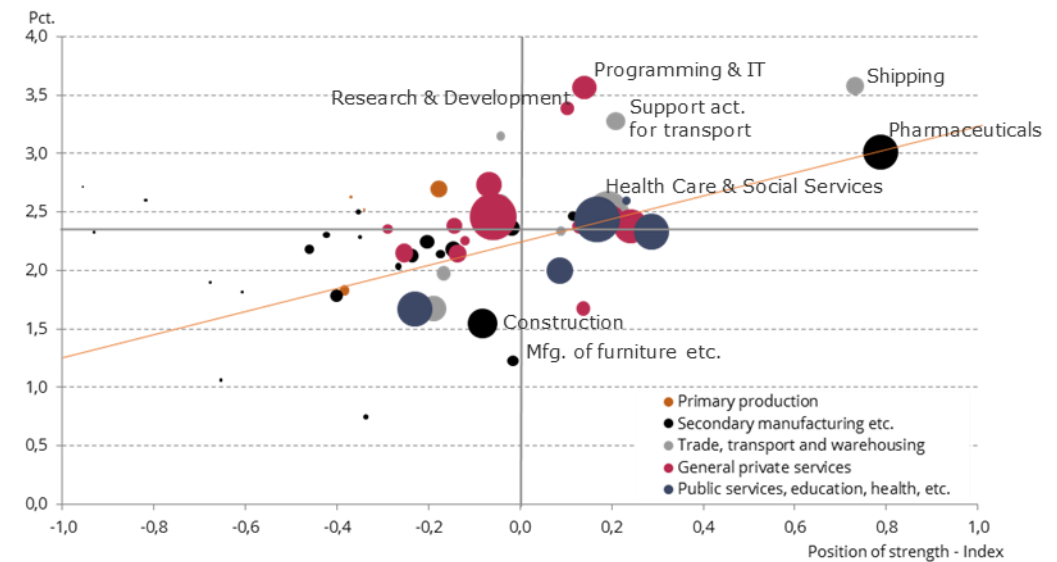
The Danish potential map shows a favourable diagonal distribution of industries indicating that Denmark tends to have a relative position of strength in the industries with high potential for growth.



GC Greater Copenhagen

While differences occur across the regions, the Greater Copenhagen potential map mirrors the national map quite closely.

A few notable differences relate to Pharmaceuticals and Programming & IT, which have stronger strength positions in GC compared to Denmark.



Note: The horizontal axis shows the industry's relative share of the country's / region's economy compared to the relative share in comparable countries. The vertical axis shows the forecasted annual potential GVA growth towards 2040. The size of the bubble indicates the size of the industry based GVA. The orange trend line is weighted with the bubble sizes.

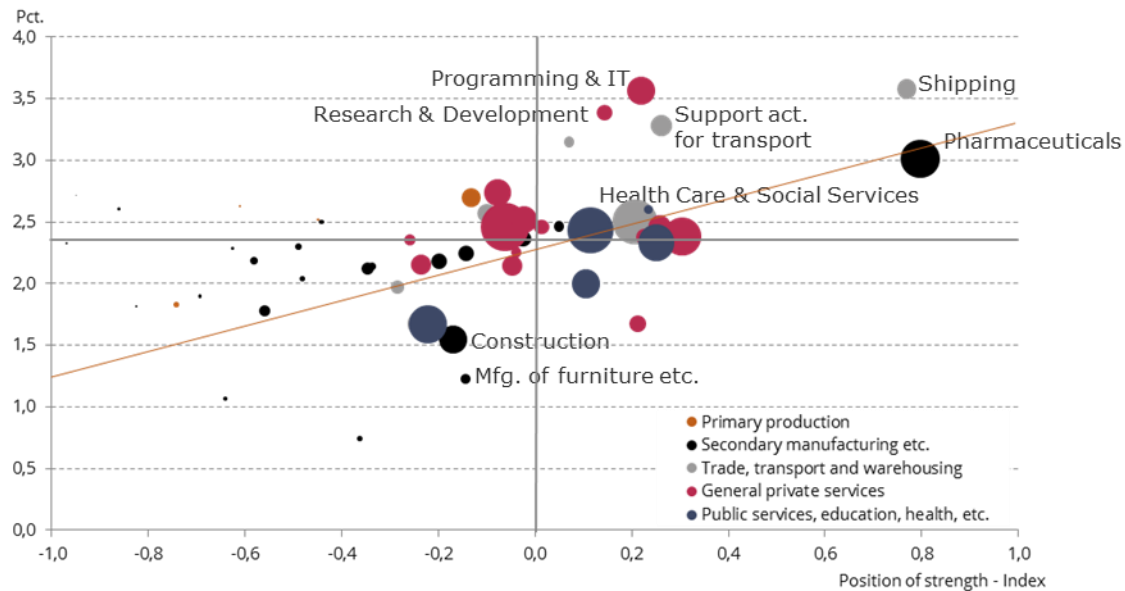
Source: Kraka and Monitor Deloitte analysis

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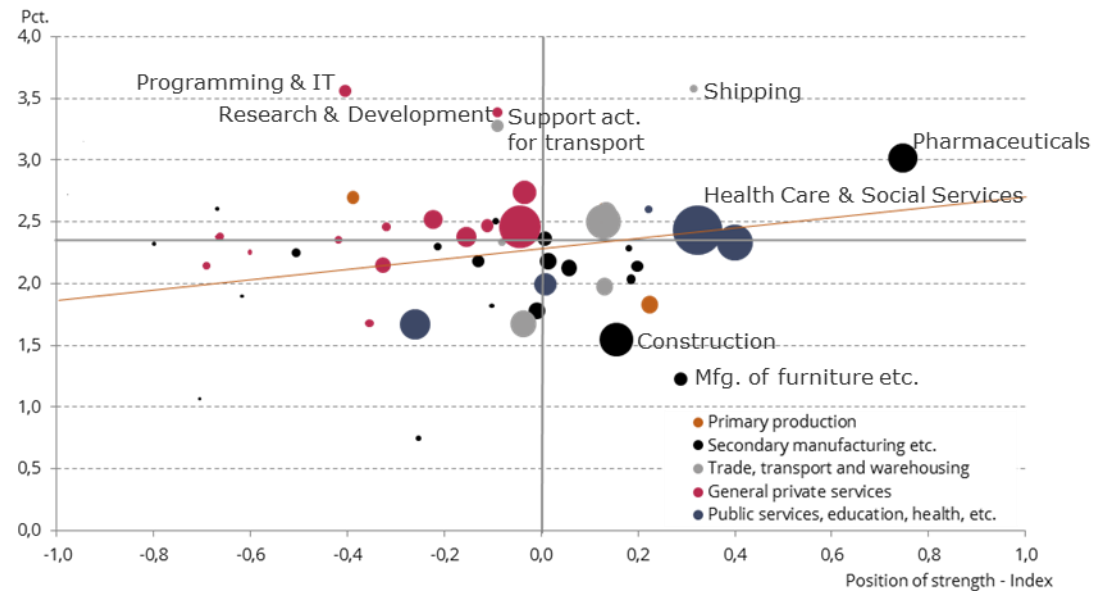
Appendix B | Industry strength mapping – Regional

The industries show different positions of strength in the two regions in Greater Copenhagen, with Region Hovedstaden being in a significantly better position overall

RH Region Hovedstaden



RS Region Sjælland



Note: The horizontal axis shows the industry's relative share of the country's / region's economy compared to the relative share in comparable countries. The vertical axis shows the forecasted annual potential GVA growth towards 2040. The size of the bubble indicates the size of the industry based GVA. The orange trend line is weighted with the bubble sizes.

Source: Kraka and Monitor Deloitte analysis

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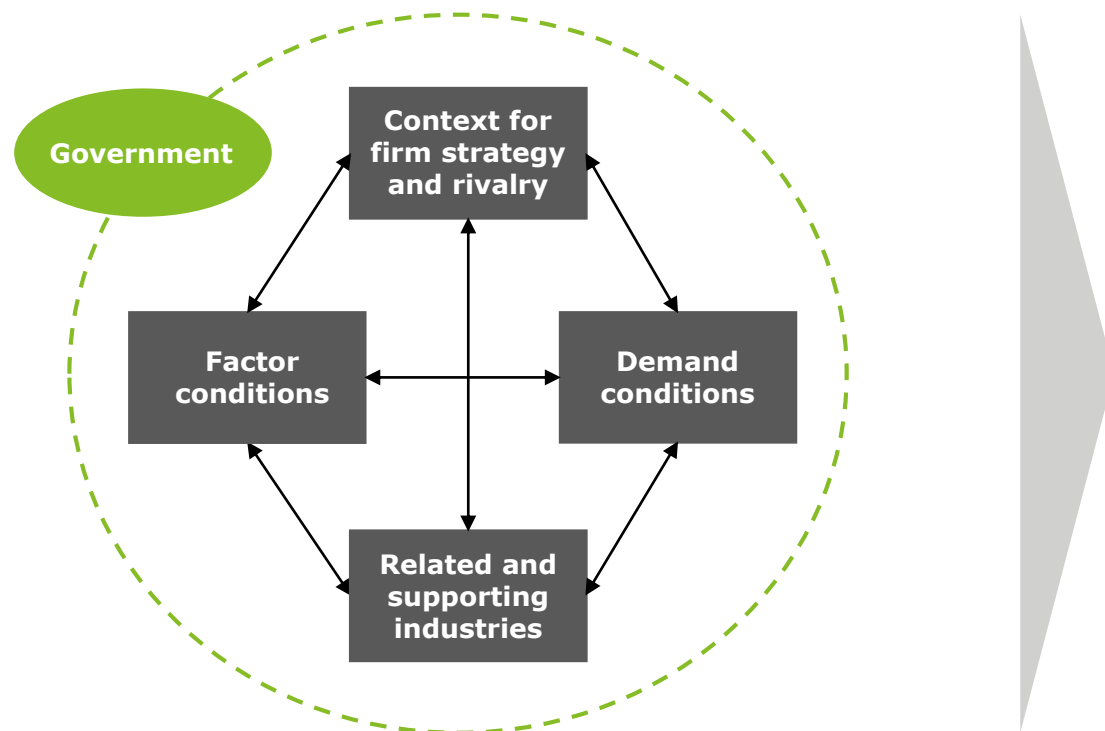
Appendix C

Solution space

Appendix C | Solution space

Based on national competitiveness theory, we highlight six enabling factors that are actionable by government to improve competitiveness

Porter's Diamond framework



Using Porter's Diamond – a framework for assessing national competitiveness – we have projected the trends onto its four main components and subcomponents. From this, we have identified the primary enabling factors that are actionable by government:

-  **Education & Workforce**
-  **Taxation**
-  **Infrastructure**
-  **Capital Resources**
-  **Regulation**
-  **Research & Innovation**

Given the lack of a formal political mandate on the enabling factors, Danish regions have very limited decision making power. Hence, a region can primarily impact the enabling factors indirectly, e.g. through lobbying and forging of alliances with stakeholders and authorities on pressing issues or allocation of funds to specific initiatives, in comparison to the direct impact a national government can wield.

Appendix C | Solution space - generic levers (1/2)

A long-list of generic levers actionable by government may be used as inspiration for potential solutions to unlock future growth potential in Greater Copenhagen

Non-exhaustive



Education & Workforce

- Increase cross-disciplinary education programmes
- Increase study seats at STEM educations
- Promote international exchange of university students
- Promote collaboration between universities and the industry
- Promote applied research programmes at universities to foster specialists
- Ease working and relocation conditions for expats
- Initiatives for spouse to retain foreign workers
- Offer continuing education related to digitization



Taxation

- Lower corporate tax rates
- Increase tax incentives for start-ups and early investments
- Offer special tax schemes for foreign experts
- Increase scope and volume of tax concessions for employee share schemes
- Increase tax concessions for venture capital investments
- Offer tax credits on IP-related income
- Increase tax incentives for R&D through super deduction schemes
- Ensure long-term tax stability
- Decrease international double taxation



Infrastructure

- Invest in state-of-the-art digital infrastructure
- Support and inform companies about the use of digital infrastructure
- Centralize public databases and increase accessibility for research purposes
- Ensure long-term planning of infrastructure projects to increase stability and predictability
- Develop regional infrastructure to facilitate connections within the region as well as to adjacent regions

Appendix C | Solution space - generic levers (2/2)

A long-list of generic levers actionable by government may be used as inspiration for potential solutions to unlock future growth potential in Greater Copenhagen

Non-exhaustive



Capital Resources

- Promote early-stage investments
- Initiate accelerator and incubator programs
- Invest in seed funding and venture capital
- Focus efforts to attract Foreign Direct Investment around clusters
- Promote linkages to international investors
- Facilitate access to growth capital and “smart money” for scale-ups



Regulation

- Streamline and speed up regulatory approval processes
- Collaborate with the industry, to ensure that regulations keep pace with developments
- Make regulatory processes more agile to support and promote innovation
- Provide transparent compliance requirements
- Simplify compliance procedures
- Decrease international trade barriers
- Strengthen and modernize IP protections
- “Sandbox” initiatives to facilitate innovation through more flexible regulation
- Align regulations and processes across GC



Research & Innovation

- Promote international research collaboration
- Facilitate knowledge-sharing networks/clusters between public institutions and private companies
- Increase funding for basic research
- Increase funding for applied research
- Promote research in areas with high growth potential, e.g. digital technology

Appendix D

List of interviewees

Appendix D | List of interviewees – Subject Matter Experts

Several Subject Matter Experts from the global Monitor Deloitte network has provided input and industry insights to this report

Megatrends

- Florian Klein, Head of Monitor Deloitte's Center for the Long View, DE

Regional and Public

- Claus Frelle-Petersen, Subject Matter Expert, Monitor Deloitte, DK

Life Sciences

- Mike Standing, EMEA Life Sciences & Healthcare Lead, Monitor Deloitte, UK
- Martin Faarborg, Nordic Life Sciences Lead, Deloitte, DK
- Thomas Croisier, Subject Matter Expert, Monitor Deloitte, FR

Financial Services

- Neal Baumann, Global Insurance Lead, Deloitte, US
- David Rush, EMEA Insurance Lead, Deloitte, US
- Stefan Bucherer, Global Banking Subject Matter Expert, Monitor Deloitte, CH
- Jan Auerbach, Insurance Subject Matter Expert, Monitor Deloitte, DK

Transport & Logistics

- Derek Pankratz, Subject Matter Expert, Deloitte, US
- Lars Andersen, Subject Matter Expert, Deloitte, DK

Real Estate & Construction

- Robert O'Brien, Global Real Estate & Construction Lead, Deloitte, US
- Jim Berry, US Real Estate & Construction Lead, Deloitte, US
- Surabhi Kejriwal, Real Estate Research Lead, Deloitte, IN
- Thomas Frommelt, DK Construction Lead, Deloitte, DK

Software & IT

- Daan Witteveen, EMEA Technology Lead, Deloitte, NL

Renewable Energy

- Marlene Motyka, US & Global Renewable Energy Lead, Deloitte, US
- Jesper Henry Skjold, Subject Matter Expert, Deloitte, DK

Appendix D | List of interviewees – Stakeholders

Additionally, senior stakeholders from public organizations have given input to future growth conditions and potentials in Greater Copenhagen



Claus Lønborg
CEO
Copenhagen Capacity



Stina Vrang Elias
CEO
DEA



Steen Hommel
Director
Invest in Denmark



Kent Damsgaard
Deputy Director General
Dansk Industri



Niels Milling
Deputy Chief Executive
Dansk Erhverv



Kresten Olesen
Director
RegLab



Mads Lundby Hansen
Chief Economist & Vice President
CEPOS



Jens Hauch
Chief Economist & Deputy Director
Kraka

Appendix E

Literature list

Appendix E | Literature list

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