SERVICE INNOVATION

THE KEY TO SWEDEN'S ECONOMIC PROSPERITY?

PREFACE

Two years ago Almega (the Employers' Organisation for the Swedish Service Sector) and Teknikföretagen (The Association of Swedish Engineering Industries) mobilised the joint venture Service Innovation Sweden. This initiative was taken in order to create a platform to exchange experiences and share knowledge in relation to service innovation, digitalisation and value creation. With support from VINNOVA (Sweden's Innovation Agency), we have arranged a variety of activities, such as seminars, workshops, and roundtables, to increase the knowledgeand capabilities around service innovation.

Our initiative is based on the firm believe that future opportunities as well as future challenges, that arises from digital transformation, require new forms of cooperation. Now more than ever before we see a high demand for innovation, but innovative ideas doesn't cut it alone. To meet the demands and expectations from both markets and customers you need to find your position in the fast moving digital era. Companies and organisations have to deliver high value solutions, where goods and services are combined into attractive concepts and competitive offerings. To do so, we believe that new ways to collaborate, both between and across industries, across disciplines of knowledge and research as well as with public bodies and users, is a necessity.

Service Innovation Sweden is one of several initiatives focusing on the challenges with digitalisation and service innovation. Around the world, governments in countries like the US, China, Japan, South Korea, Finland, and Germany have adopted strategic programmes for innovation and smart service solutions.

One important ambition with Service Innovation Sweden is to mobilize all actors interested in finding ways to capture the opportunities with service innovation and digital transformation. As other countries and markets are gathering forces to make the most of the era of digitalisation we see an urgency for Sweden to do the same. With this report we want to inspire and share information by setting current trends and happenings in some comparable economies into context. We use these examples to shed a light on how Sweden in the best way possible can capture the opportunities that comes as a result of digital transformation and the arising knowledge-intensive service economy. We see a golden opportunity and a number of reasons to continue to put focus and efforts on service innovation, not the least in the view of the digital shift and globalisation.

To conclude we would like to express a special thank you to Mr Walter Ganz, Director at the Fraunhofer Insitute and Professor Andy Neely, Director at the Cambridge Service Alliance, as well as everyone who have taken part of Service Innovation Sweden, for sharing their knowledge and experiences.

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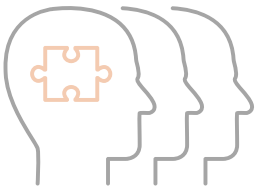
TRANSFORM DATA TO KNOWLEDGE

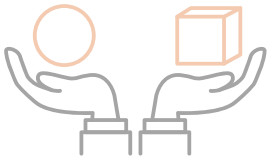
LEADERSHIP

WORKGROUP



PROJECT TEAMS

REPORTING



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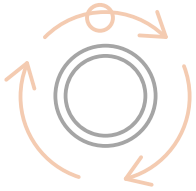
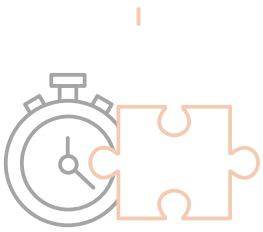


BUSINESS PROCESS MANAGEMENT

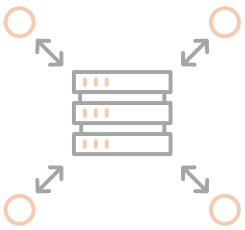


SOLUTION

CUSTOMER FOCUS

RESPONSIVE EVALUATION

RESPOND TO CUSTOMER NEEDS



SYSTEMS INTEGRATION

CUSTOMER SERVICE MANAGEMENT

LEADERSHIP

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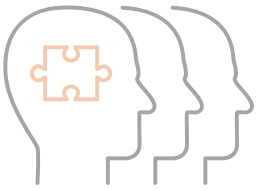
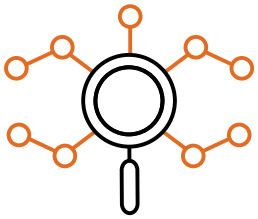


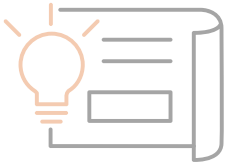
PROJECT TEAMS



INFORMATIONAL RETRIEVAL

NEW TRENDS OF ANALYTICS

EFFECTIVENESS OF ADVERTISING



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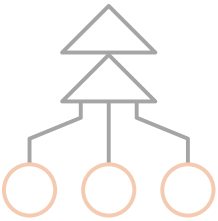
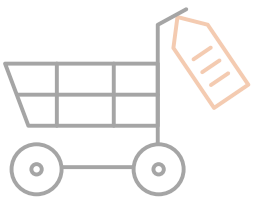
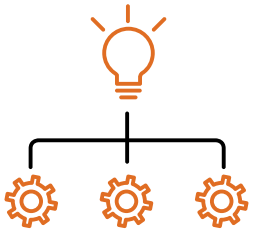


INTEGRATION



OFFERINGS FOR CUSTOMER

AUTOMATED ONLINE ASSISTANT



ALLOCATION OF RESOURCES

ETT GYLLENE TILLFÄLLE ATT ANTA DIGITALISERINGENS MÖJLIGHETER

Runt om i världen pågår en mängd satsningar för att på bästa sätt möta konkurrensen på den globala marknad där kunderna blir allt mer informerade, inflytelserika och krävande. Allt oftare ligger det värde som kunder är villiga att betala för i en kombination av produkter och tjänster, som alla är nära eller direkt kopplade till digitala lösningar. Många beskriver den pågående digitala transformationen som industrisamhällets fjärde paradigmskifte. Det kan mycket väl vara i ett sådant skifte vi befinner oss. Oavsett hur vi väljer att definiera den digitala era vi lever i efterfrågar marknaden inte bara innovativa idéer och kompetens utan också förmågan att leverera de lösningar som möter kundernas krav och förväntningar. Detta då snabb, billig, uppkopplad och tillförlitlig teknik löser allt fler problem i vår vardag, för såväl företag som i var mans interaktion med omvärlden. Kunden, oavsett om denna är en global industrikoncern eller en privat konsument, förväntar sig allt mer sömlösa lösningar i form av digitala tjänster som adderar värde till befintliga produkter eller tjänster.

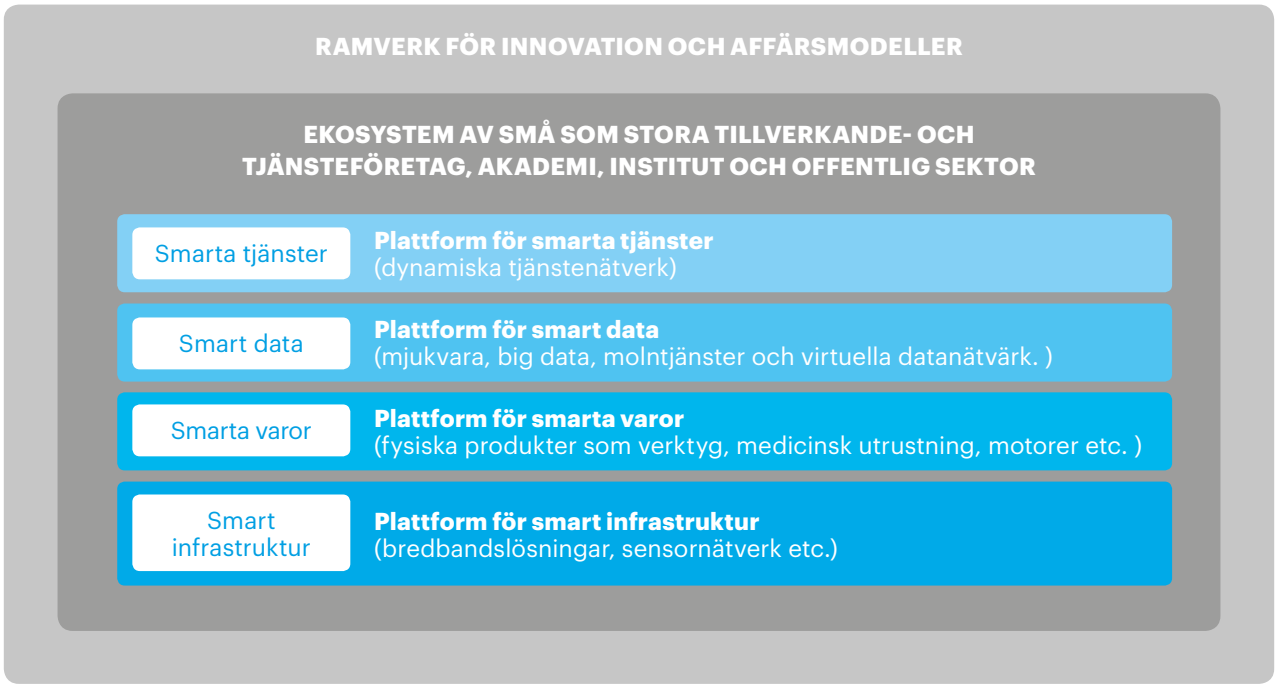
"Kunden i centrum" är inte på något sätt nytt, men digitaliseringen har tillfört nya verktyg för alltmer individanpassade kundupplevelser. Affärer utgår allt oftare från ekonomiska modeller som bygger på cirkulära kretslopp och utbyten av tjänster snarare än linjära processer. Att utveckla den kundcentrerade affärslogik, där kund och leverantör i ett närmast symbiotiskt förhållande hittar formerna för hur tjänsten och dess affärs- och betalningslösningar ska se ut, utmanar industrins traditionella modeller. Kraven på snabbare och mer transparent utbyte av information och interaktion i alla delar av processen bidrar till utmaningen. När en allt större del av kundens upplevda värde ligger i någon form av tjänstelösning skapas också nya typer av värdekedjor. Det bidrar till att traditionella nyckeltal inte fullt ut fungerar för den som vill påvisa eller göra anspråk på värdet i affären. För att bedöma potentialen i nya digitala tjänstelösningar blir det därför allt viktigare att hitta metoder för att samla in, analysera och värdera all den data som uppstår i interaktionerna mellan leverantör och kund.

Utvecklingen av snabb och smart informations- och kommunikationsteknik (IKT) erbjuder en mängd möjligheter. IKT ger oss tillgång till mängder av värdefull data. Det verkliga värdet ligger dock i förmågan att dra slutsatser av och anpassa lösningar i relation till den kunskap som går att få ut av all tillgänglig data. För denna transformation krävs hög kompetens och kvalificerade tjänster.

Företag som PayPal, Uber och Airbnb är typiska exempel som lyfts fram för att beskriva hur man lyckats innovera betalningslösningar, taxi- och hotellservice. Dessa företag är redan klassiska exempel på tjänsteinnovationer som tillvaratagit digitaliseringen möjligheter. De bidrar till bilden av vad som är

Figur 1: Ett transformativt förhållningssätt till affärsmodeller för smarta tjänster.
Källa: Fri översättning av presentation av Professor Andy Neely, Cambridge Service Alliance (februari 2016).

Figur 2: Ramverk för "smartare tjänster".
Fri översättning av presentation av Walter Ganz, Fraunhofer Institutet (februari 2016).



möjligt och hur affärslösningar borde kunna fungera, vilket i sin tur ställer krav på anpassning hos mer etablerade företag. I företag som Facebook, Amazon och den kinesiska motsvarigheten Alibaba aggregeras data och insikter om kunder som bereder väg till nya innovationer. Att känna sin kund så väl att man till och med förmår att förutse dennes behov beskrivs som vägen till framgång.

Etablerade företag, oavsett om dessa är produkt- eller tjänstebaserade, behöver hitta ett mer agilt arbetssätt för att möta konkurrensen. För att lyckas krävs också mod att bryta invanda mönster och finna nya sätt att samverka, såväl tvärdisciplinärt inom det egna företaget som i nya affärskonstellationer, där den största konkurrenten också kan vara din närmaste partner. Det ställer givetvis tuffa krav på företagens anpassningsförmåga och många söker efter sin egen modell för tjänsteinnovation.

Strategiska innovationssatsningar relaterade till digitalisering rör givetvis inte bara näringslivet. I länder som USA, Kina, Japan, Sydkorea, Finland och inte minst Tyskland, har man initierat strategiska nationella kraftsamlingar för innovation och smarta tjänstelösningar. I den tyska strategin Industri 4.0 och det tillhörande programmet "Smart Service World" pekar man från högsta regeringsnivå ut riktningen till hur Tyskland ska bli en världsledande innovationsnation. Genom satsningen skapas den plattform som möjliggör nya former för samverkan mellan alla aktörer och kunskapsfält som kan bidra till innovation. Såväl industri- som tjänstekoncerner, små och medelstora företag, akademi, institut och offentlig sektor har medverkat i skapandet av det som nu utgör ramverket för nya smarta digitala lösningar.

Figuren ovan sammanfattar vad Tyskland strävar efter att uppnå med Smart Service World och hur alla sektorer av ekonomin ingår i programmet. Med denna satsning strävar man efter att bygga en infrastruktur där nya kunderbjudanden kan genereras utifrån den samlade kunskap som finns hos alla inblandade aktörer.

Även i Sverige finns flera tagna initiativ som ska bidra till bättre utväxling i relation till digitaliseringens möjligheter. Nyindustrialiseringsstrategin och de strategiska innovationsprogrammen som finansieras av VINNOVA är några exempel. Ännu saknas dock en mer strategisk satsning på tjänsteinnovation.

Sveriges värdeskapande näringsliv, med en högt automatiserad tillverkningsindustri och starka företag i den kunskapsintensiva tjänstesektorn, är en god och konkurrenskraftig bas att utgå ifrån. Med en mer strategisk och branschövergripande satsning på tjänsteinnovation kan vi nå ännu längre. Med denna rapport vill vi därför både inspirera till och argumentera för en sådan satsning. Här finns mycket att vinna för ett land som på så många sätt är beroende av en stark och konkurrenskraftig exportmarknad. För att lyckas krävs samverkan på bred front så att vi, liksom andra nationer, ser till att göra det mesta möjliga av våra styrkor.

A GOLDEN STATE OF MIND

Advanced economies have in recent years expressed an urgent need to further develop their high value-adding economic sectors. This is a golden opportunity to deploy bold national strategies, such as advanced digital connectivity, sophisticated manufacturing processes, insourcing decisions, as well as service innovation to expand even more.

After decades of instability, where many jobs were moved to cheaper locations, more customer-centric product and service offerings have emerged. Technology is today cheaper, mainstream and more available. It is no longer just about faster smartphones or more Internet bandwidth; it is now more about how technology meshes with business models for which there is a commercial demand. Furthermore, there are now a significant number of open libraries, in which developers can build content for new software and hardware applications. These libraries enable rapid testing of new ideas so that new product systems and services can be developed and commercialised.

Connected customers too are becoming ever more informed, empowered and demanding. This results in notable shifts in behaviour, preferences and standards. How customers discover brands, make decisions, influence one another, and what they ultimately value is also evolving. In addition, agile and technologically disruptive companies are entering markets either to aggressively gain ground from traditional companies or to establish themselves in new markets. Whether this digital transformation is a paradigm shift, a new way of thinking is nevertheless necessary to build and promote awareness of technical skillsets that not only enable innovation, but also help to build far more customer-centric and digitally-enabled products and services.

Government-led innovation programmes

Government-led innovation programmes in countries like Finland, Germany, and various Asian economies as well as in the United States have evolved to enable a more intimate collaboration between inter-private and inter-public sectors. The aim is to transform these sectors so that they can move from being analogue, and potentially fragile, to becoming digital and agile. Not only are these Governments seeking a future relevance in current export sectors; they are also encouraging organisations and companies to instil higher digital awareness in order to develop new customer-centric products-service bundles. Digital is not a supplement to business but a vision and a mindset, helping companies to define and reach their business goals.

Similarly, a vision for digital transformation and service innovation can help promote and guide a country, its government, its business sectors as well as its non-market forces to make the most of the new opportunities that come with this era. This paper sets out to inspire the reader by presenting examples of ongoing digital movements and service innovation trends. It will also serve the purpose of illustrating why a service-dominant logic is pertinent to Sweden's current and future economic setup.

Customer-centricity: a symbiotic relationship between providers and users

Information and communication technologies (ICT) have become an integral part of our world. Digital products, processes or services are increasingly interwoven. The goal of many enterprises is to design on-demand, personalised or company-specific smart services that solve distinct end user problems. The term servitisation has been coined to encapsulate a concept of immediate urgency and opportunity for global manufacturers. This is because servitisation can transform business models from being product-dominant to customer-centric in order to maintain or recover competitive advantage.[1]

Many big companies are currently facing a number of challenges that they need to overcome so that they can compete with smaller innovative and often fast moving companies. In many larger organisations, digital is often a cacophony of disconnected, inconsistent and sometimes incompatible activities.[2] An innovative company of services or products, or, which is more often the case, a combination of the two, is barely hampered by corporate legacy or cultural constraints. Instead innovative companies keep an agile front to actively deliver either incremental or disruptive so-called "user journeys" that solve distinct customer problem. Large companies rarely put as much sustained effort and management attention into innovating services as they do with products.[3]

1 Why Manufacturers Are Shifting Their Focus From Products To Customers, Forbes, 20 Feb 2014 (onforb.es/1Ry3bce)

2 Should Your CIO Be Chief Digital Officer? HBR 2 Aug 2013 (http://bit.ly/1TLAV9y)

3 Service innovation in a digital world, McKinsey & Company, Feb 2015 (http://bit.ly/1PPw4jB)

End users of products or services have also become far more aware of what they want and what they are willing to pay for. Today's customers either set short or long-term expectations on user journeys when interacting with a product or service. In a commercial setting, they can be particularly informed given the high availability of and fast access to full price transparency and product information. Customers shape visions and purchasing decisions based more on social influences online, and thus build digital identities to barter data value. They also expect seamless shopping anytime, anywhere as well as a more personalised experience that is only one click or a single chat-question away from making a decision. Today, a few online platforms such as Facebook, eBay or Amazon, access consumers across a wide scale of industries and use this data to build services and user journeys. Therefore, when innovating a product, service or new business combination, digital applications should be perceived as a powerful enabler to co-exist in a symbiotic relationship between providers and users.

Customers expect quality information fast. They also expect price transparency that empowers and positively influences the purchasing process. At the same time, manufacturers of product-service systems must learn to provide bespoke hassle-free customer experiences, while offering more flexible payment, delivery and feedback systems.

"AaaS": ANYTHING AS A SERVICE IN A CIRCULAR ECONOMIC SYSTEM

Instead of purchasing a service[4] over the counter and paying for periodic upgrades, so-called Software as a Service (SaaS) is subscription-based, with all upgrades for the software being provided during the term of the subscription. When the subscription period expires, or if the user terminates the subscription, the software is no longer valid.[5] Below we will look at wind turbines, jet engines and other industrial machines or investment equipment, which are examples of products that have successfully transitioned to become services.

The age of service-led industrial manufacturers

GE's airplane engine business has shifted its revenue model from selling an expensive engine, to instead charge airlines' income statements for a per-minute fee to operate the machine. Using wireless sensors and cloud computing for the purpose of this per-minute fee as a new business revenue model, the company now offers a complete solution for delivering, mounting and testing an engine to maintaining and exchanging it after-life for a new engine. GE already captures 50 million data points collected and communicated by 10 million sensors installed on USD 1 trillion worth of equipment, ranging from medical imaging systems, to locomotives, to jet engines.[6]

Some 50 years ago, Rolls-Royce's aviation division coined the Power-By-The-Hour[7] or PBH term long before the Cloud or Internet of Things even existed. The PBH-concept is relevant to many other industries where a company can provide a repeat service for the same product.

As the engine is located on the wing of an airplane, the next generation engine is being developed and partly influenced by the user's perspective through in-use data collection. Data, whether it is big or small, is boiled down to new specifications that can improve engine performance, quality and longevity. Geographically proximate factories are then connected to simulate and optimise sourcing and manufacturing steps before the engine assembly goes live. In essence, connectivity devises data which can be made digestible so that more educated decisions can be made. All of the above are service-driven businesses and increasingly, products are becoming highly dependent on innovating new services.

Nowadays, Rolls Royce calls itself a service-led manufacturing company, as over half of its revenue comes from service even if it invests heavily in R&D and manufacturing.[8] Another example of an actively service-led manufacturer is carmaker Daimler, which says approximately 80 percent of the company's profits results from service sales.[9]

Notably, GE is developing software operations in each of its business lines with the goal of building a $15 billion franchise under a plan to create a "digital industrial" company.[10] To embrace change as a competitive advantage, the CEO of GE, Jeff Immelt, was recently quoted as saying: "if you went to bed last night as an industrial company, you're going to wake up today as a software and analytics company."[11] This is a key movement at GE: to build knowledge-intensive consulting services in each of its larger divisions so that a higher-degree of customer attention can be captured via software services.

Considering that the servitisation of products for GE, Rolls Royce and Daimler means becoming service-led manufacturers shows how digital transformation and service innovation is a far more intimate play today than ever. Equally, servitisation

4 Coined by the author as en evolution from Software as an Services (SaaS)

5 PC Magazine Encyclopedia, Accessed 28 Feb 2016 (http://bit.ly/1RcHMCQ)

6 How GE generates $1 billion from data, Fortune Magazine, 10 Oct 2014, (http://for.tn/1p2IIMV)

7 'Power by the Hour': Can Paying Only for Performance Redefine How Products Are Sold and Serviced? 21 Feb 2007, Knowledge@Wharton, University of Pennsylvania (http://whr.tn/1k8yPPr)

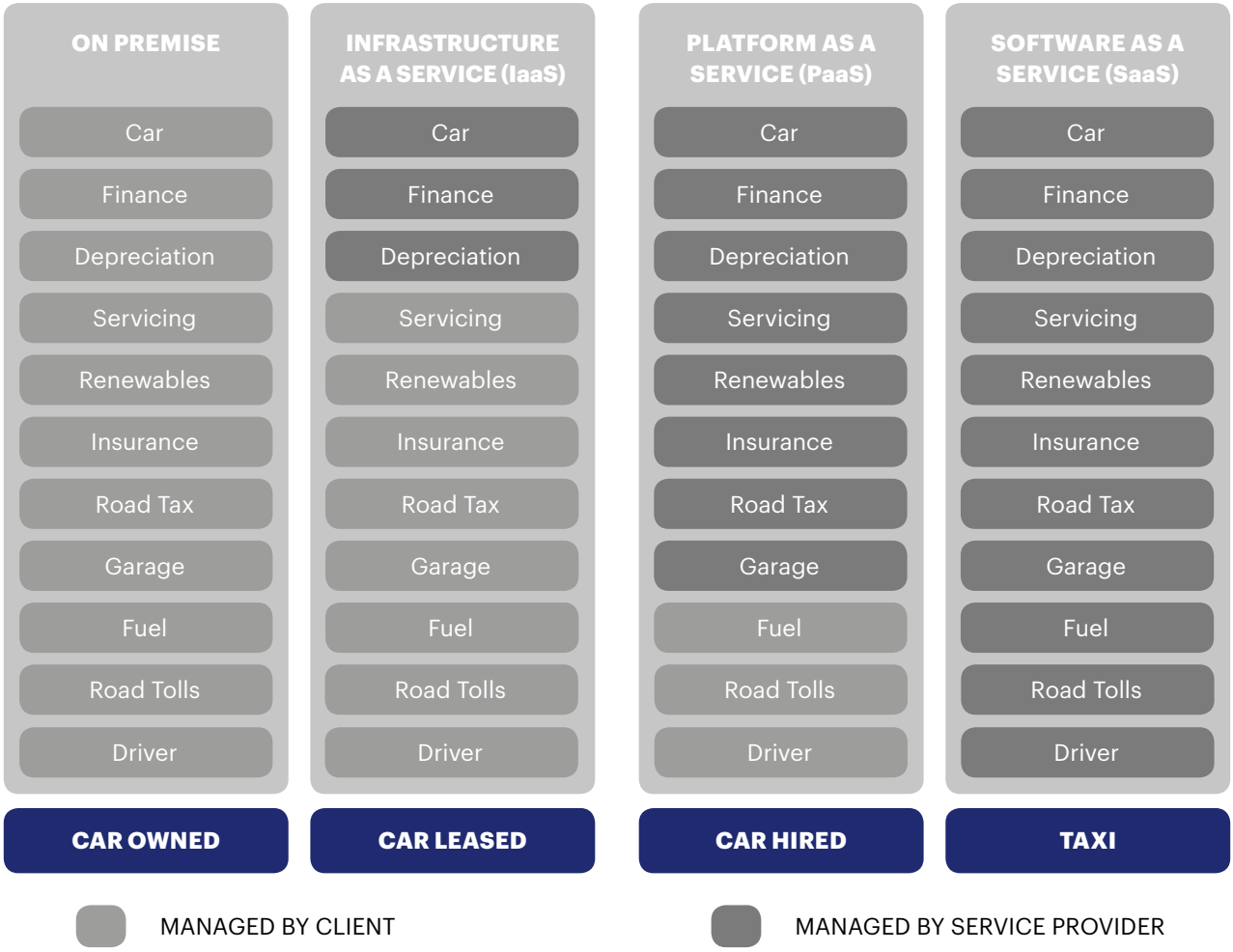
8 Defining High Value Manufacturing, University of Cambridge, Jan 2006 (http://bit.ly/1RxllLt)

9 Economic importance of services, Value added chain by Daimler AG, Fraunhofer IAO, 9 Feb 2016 seminar, Stockholm Sweden

10 GE Sees $15 Billion in Software Sales in Digital Transformation, Industry Week 29, 2016 (http://bit.ly/1VOcMwX)

11 How GE generates $1 billion from data, Fortune Magazine, 10 Oct 2014, (http://for.tn/1p2IIMV)

Figure 3: Evolution of a Car as a Service (CaaS).
Source: cloud53 (21 Jan 2016)



takes many forms and questions traditional business models. Knowledge-intensive firms are distinct and different from other organisational categories.[12] In Sweden, Enator AB, which in 1999, merged with a Finnish company and later renamed to Tieto[13] , sets an example for how service-innovation is enabled through a computer-consulting firm. Back then, Enator AB accelerated the implementation of IT-solutions and the innovation of services into non-service oriented but knowledge-intensive companies. Today, Tieto is one of the largest IT-companies in Europe offering IT and product engineering services to vast number of industries worldwide. Thus, Enator is an example in history for how service innovation can first be enabled through consulting expertise and later diffused as a virtue inside larger corporations.

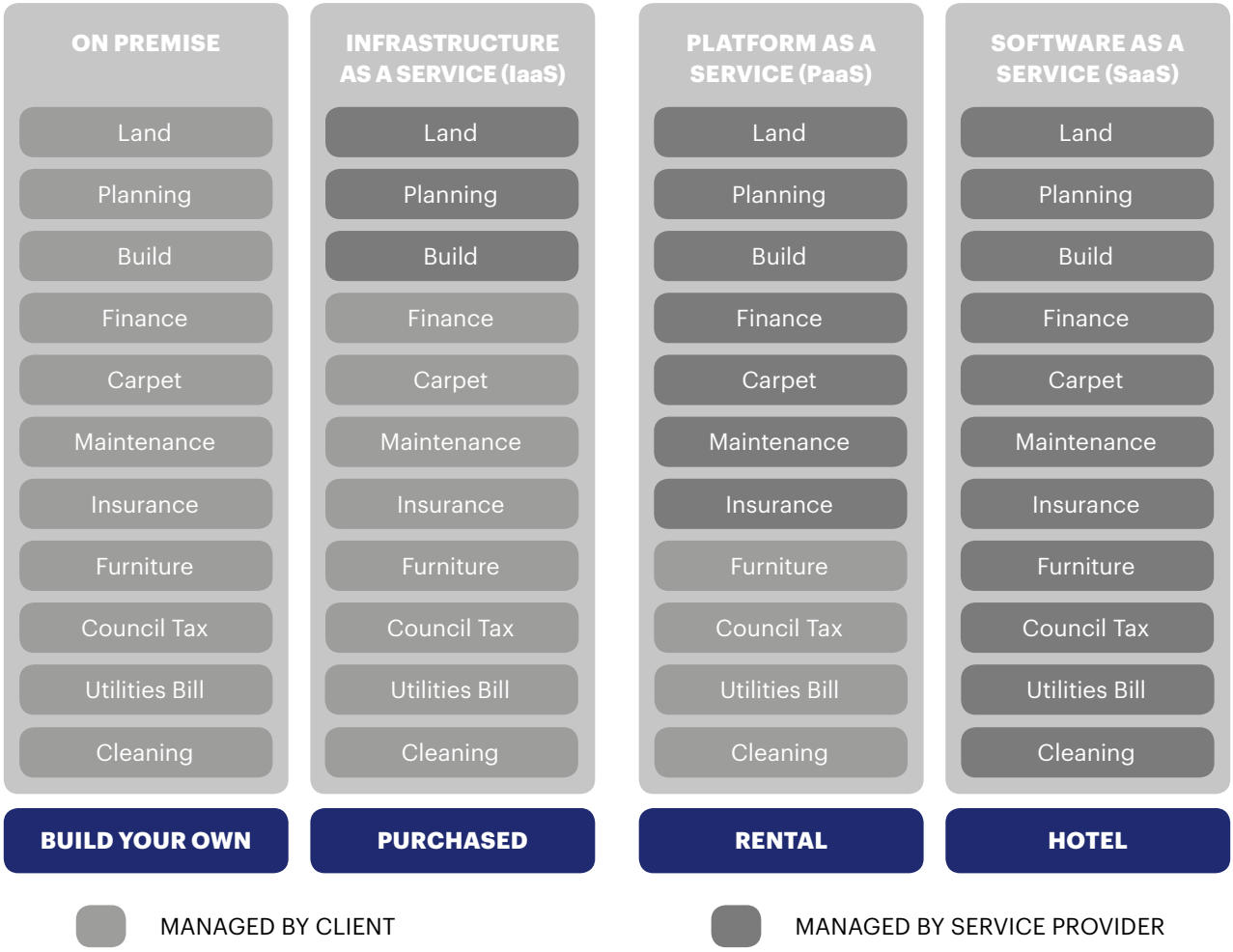
A recent study from the Swedish Federation of Consulting Engineers and Architects[14] shows that much research is revolving around service development and service innovation – both vital

12 What Really is a Knowledge-Intensive Firm?, Rylander, A., et al (2005), Royal Institute of Technology (bit.ly/21aFuMJ)

13 Management of Knowledge-intensive Companies, Alwesson, M,. (1995) Accessed 9 Mar 2016 (bit.ly/1TKOGGb)

14 Tjänsteinnovation nyckeln till framgång för kunskapsintensiva tjänsteföretag, STD, Accessed 9 Mar 2016 (bit.ly/222z69K)

Figure 4: Evolution of the home as a service (HaaS).
Source: cloud53 (21 Jan 2016)



to increase the competitiveness of knowledge-intensive firms. The study infers that total commercial offerings are becoming more tailored to individual customers over a long-term period and this is where value is created. To meet reviving customer needs and to stay globally competitive, service development today requires more knowledge-intensity so that the entire ecosystem of solutions and relevant business models can be developed.

Figure 3 depicts the servitisation journey for a car in relation to total cost of ownership for a user. Let's assume a car is a must-have mode of transportation. The servitisation of an owned car versus a taxi shows how transport as a service can be innovated into more focused steps of services, in which companies can become experts and develop standalone offerings.

Similarly, Figure 4 shows how home ownership on one extreme takes the form of an owned property; while on the other extreme could be turned into a hotel. In between, new companies can evolve to serve various elements of a property by offering relevant goods or services. Similar to the GE and Rolls Royce cases, the end customer does not necessarily need to own or depreciate assets but instead use an income statement to pay per minute or pre-use.

SKF, a Swedish ball-bearing maker, provides 45 different iPad apps so that managers can monitor the maintenance, speed, and reliability of up to 8,000 kinds of smart objects. This has led to new business models, putting SKF in the position to provide so-called "knowledge as a service" (KaaS), as more than a half million machines are already connected to the SKF Cloud.[15]

15 How Industrial Systems Are Turning into Digital Services, HBR 23 Jun 2015 (bit.ly/1Nhd7n4)

In this circular system, with a dependency between physical products bundeled with services, the importance to innovate with a customer-centric approach – when building new business models, to make, sell and track customer expectations – becomes critical.

Collaborating with and learning from customers is essential within a service-centred logic, which means that value is defined by and co-created with the customer, which has obvious implications for self-service technologies.[16]

Beyond this, new value chains are formed and new KPIs are established as traditional financial accounting principles may no longer suffice. Consider the difference: a customer who is acquiring investment goods as depreciating assets on the balance sheet and the same customer buying a per-minute service. Which seller invoices the income statement? This shift in accounting sets higher liquidity requirements on the buyer and the company's available cash flow and as a result, its market value. Equally, as less capital is tied up in equipment, the freed amount can be used more innovatively. This transformation (purchasing services instead of acquiring entire assets) clearly changes how companies can plan budgets and affords them the opportunity to allocate funds for far more productive purposes.

A world of 25 quintillion pairs of buyers and sellers

Worldwide there are some 25 quintillion potential pairs of buyers and sellers. A quintillion is a big number comprising 18 zeros. The selection that these huge numbers of transactions afford to both buyers and sellers make us all better off.[17] Because digital technologies can help solve commercial problems, new transaction models enter the market to help buyers and sellers exchange payments, products or services.

Companies such as PayPal, Uber and Airbnb are best-case examples of how services can innovate beyond conventional banking, taxi and hotel services. The rather disruptive approach to service is in part made available and affordable as a result of widely available and rapidly diffused technologies such as smartphones and high-speed wireless Internet. As mentioned earlier, customers are today increasingly savvy, aware and educated. They set far higher expectations on the user journey associated with a certain product or service. They demand a hassle-free but better service. They influence and they are far more able to decide for what experience, be it a service or a product, they enjoy and are willing to pay for.

PayPal was founded in 1998 and is today a listed company with USD 9.4 billion in revenues and 173 million customers, employing 15,800 people worldwide.[18] Airbnb was founded in 2008 with 2,400 employees in 21 countries and, of which 1,160 were hired 2010.[19] Uber employs some 4,000 employees in 61 countries, of which 2,000 are based in San Francisco. Uber's service is available in 339 cities and its 160,000 drivers collect 80 percent from the cost of each completed ride, while Uber collects the remaining 20 percent.[20]

Both Airbnb and Uber are privately held, with pending lawsuits from incumbent hotel chains, government bodies and taxi unions in various countries. However this will not halt their progress as all industries are subject to being disrupted with service-led innovation and application of hard and soft technologies. Both companies are said to be loss-making which is no different from PayPal's early years of losses and because profits should be thought of in the long-term. What is striking however is that all companies are digital and built on service-led and knowledge-intensive innovations.

These companies are classic examples of service innovators that pioneer in entering new markets, while competing with relatively non-to-digital legacy industries such as banking, taxi and hotel services.

Additionally, smarter services are present in traditional retail trade, through online marketplaces so that the rivalry won't stop. On Black Friday 2013, the Chinese e-tailer, Alibaba, sold USD 5.75 billion in goods. That is three times more money transacted in one single day than all of America spent on all US shopping sites combined across Thanksgiving and Black Friday. For the 2013 fiscal year, Alibaba reported over USD 240 billion in sales, more than Amazon and eBay combined.[21] In 2015, Alibaba brought in USD 1 billion during the first 8 Minutes of China's Black Friday, which is more than all American online retailers earn on the weekend after Thanksgiving.[22]

Whereas financial performance is a metric serving shareholder yields as well as reporter satisfaction to sensationalise headlines, Alibaba is a Chinese service innovation and an Amazon-eBay hybrid, serving China's mammoth consumption appetite. With the wealth Alibaba is amassing on its books, it is also becoming a digital expert. This evolution entitles Alibaba to innovate and build more sophisticated and competitive ser-

16 Vargo, S. & Lusch, R. (2004) Evolving to a new Dominant Logic for Marketing, Journal of Marketing, 68, 1–17.

17 We're All 'Phools': Nobel Laureates Have a New Critique of Capitalism, WSJ, 15 Sep 2015 (on.wsj.com/1QF1nv0)

18 PayPal Company Accounts 2015, accessed 28 Feb 2016 (http://bit.ly/1T3wh6E)

19 Here's how Airbnb justifies its eye-popping $24 billion valuation, 17 Jun 2015 (http://for.tn/1VKmWi3)

20 Uber-nomics: Here's what it would cost Uber to pay its drivers as employees, 17 Sep 2015, Forbes (for.tn/1UZCAEB)

21 Alibaba has more sales than Amazon and eBay combined, but will Americans trust it? 7 May 2014, The Verge (bit.ly/SMFVhL)

22 Alibaba Brought in $1 Billion During the First 8 Minutes of China's Black Friday, 11 Nov 2015, The Atlantic (theatln.tc/1SK8nd0)

vices that in the near future may be ready to enter and compete in markets outside China.

Taking the above examples into account, one can deduce that connecting the dots, as once coined by Steve Jobs,[23] to design a new system of products and services is a vital force forward for any company. Moreover, if the market in which the company is based offers an infrastructure of advanced skills and relevant experiences, then technology and innovation will thrive. This is also referred to as economies of mass,[24] where economies of scale, scope and experience combine to build a stronger competitive position.

However, while connecting the dots shows one side of the coin, the flip side of the same coin is being able to monetise them. This approach could also be the ultimate test of how digitalisation and smart services are combined and then delivered to market.

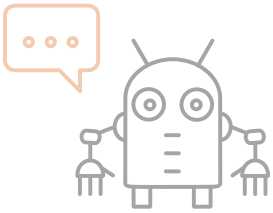
In this vein, it is critical to ask how a customer's loyalty to a certain company and its brand is revaluated – strengthened or diluted – by a company's infrastructural abilities to innovate smart services associated with physical products. As customer forces are so vibrant, enabling service innovations across industries to test new ventures, fail and move on to the next, will not only be important but a determinant of survival for any competitive sector.

To stay competitive, AaaS is perhaps the thought-provoking mindset that decision owners and influencers across market as well as across non-market forces,[25] should actively pursue and promote when aspiring to transform economic sectors into digital, knowledge intensive and service-led.

23 "You've got to find what you love" Steve Jobs Commencement Speech, Stanford University, 14 Jun 2005 (stanford.io/1exNzAP)

24 Rethinking Strategy for an Age of Digital Disruption, BCG, 19 Mar 2014, (on.bcg.com/1hSc6kH)

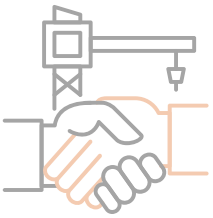
25 A non-market [force] refers to internal and external organizing and correcting factors that provide order to market and other types of societal institutions and organizations – economic, political, social and cultural – so that they may function efficiently and effectively as well as repair their failures, Boddewyn (2003)



INTELLIGENT AGENT

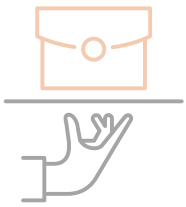
IMPLEMENTATION OF INITIATIVES

RESPOND TO CUSTOMER NEEDS



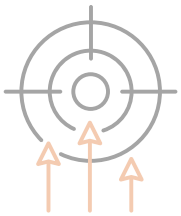
BUILD RELATIONSHIP

GENERATE VALUE FOR INVESTORS



PORTFOLIO OF OFFERINGS

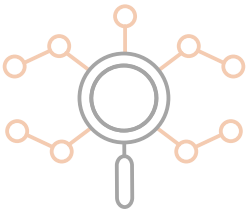
ANALYSIS AND REPORTING



INTENT

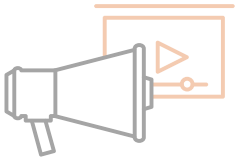
KNOWLEDGE MANAGEMENT

SCOPE OF THE BUSINESS

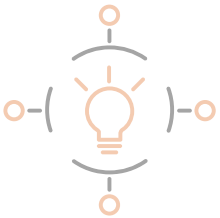


INFORMATIONAL RETRIEVAL

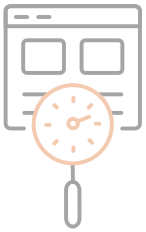
SHARING RESULTS



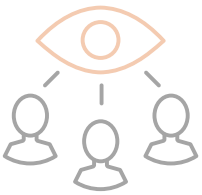
INTERNET PROMOTION



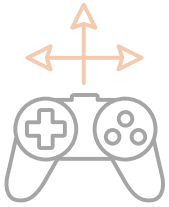
CREATIVE TECHNIQUES



SEO



PROMOTION IN SOCIAL NETWORKS

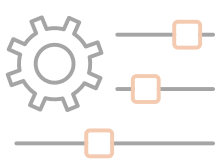


MANIPULATE

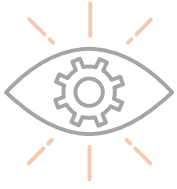
PERFORMANCE INDICATORS

STRATEGIC BEHAVIOR

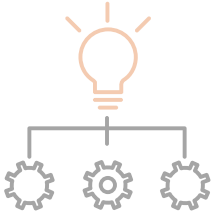
MARKET STANDING



CONFIGURATION



MONITOR EXECUTION



RESOURCE ALLOCATON

COMPETITIVE DYNAMICS

THE DIGITAL RACE AND SMART SERVICES: LESSONS FROM SWEDISH PEERS

The world's industrial paradigm has traditionally travelled through three stages: employing manpower, establishing infrastructures and automation. In advanced economies, a fourth stage of digital transformation has evolved and is now fuelled by Information, Communication and Technology (ICT). Digital transformation in ICT means drawing accurate results by collecting and analysing data, which gives tremendous new opportunities to the world.[26] Enabling digital transformation means keeping abreast of developing applied sciences that can help grow business and market competitiveness. However, it is vital to attract and engage the right workers from the outset and indeed throughout their careers so that their technical qualifications are kept relevant. Such preparedness and gap reduction will help create a future with more qualified technical jobs.

Sweden has a long tradition of quality standards for higher education systems and the country has built many global industrial companies. The Swedish market is stable, transparent, small in scale but sophisticated in scope, with a myriad of educated users and end consumers of a wide range of products and services. This good infrastructural mix of advanced technology, people and societies encourages the development and testing of ideas locally while exporting them globally. It is important to build on such legacy, which is why adopting digital transformation through service innovation should be embraced in Sweden.

Several advanced economies have in recent years taken aggressive measures to voice guiding principles for digital transformation with a particular emphasis on a service- dominant logic. The aim of each programme is different in scale and scope as well as in policy priorities, allocated resources and engagement. In a fresh Government push, VINNOVA, Sweden's Innovation Agency was mandated with SEK 22 million to investigate the status of Sweden's industrial manufacturing base. Specifically, three areas were requested by Mikael Damberg, Minister for Enterprise and Innovation,[27] for further investigation.[28] First, the objective was to identify current threats and opportunities in the installed base and present guiding policies so that Sweden could take a leading role as a sustainable industrial country. Second, VINNOVA was tasked with drafting an action plan that augments the digitalisation of the Swedish manufacturing base. This strategic innovation plan aimed at distributing resources across private, public and academic sectors, allowing them to collaborate more intimately for a new industrialised Sweden. The third goal was to provide appropriate resources for the action plan. The result of the study is imminent with a hearing set for 30 June 2016.[29]

Additional pending initiatives include a proposal for structural shifts through innovation and digitalisation. This would encourage the more sustainable economic and environmental development of Sweden's industrial production base. Various service strategies will also be deployed to procure longevity in Sweden's knowledge economy.[30] The Government is also allocating SEK 800 million for initiatives to promote Swedish exports. The strategy,[31] which runs between 2015 and 2019 and contains initiatives in 22 prioritised areas, is based on the needs and wishes of a large number of companies and SMEs to further reduce barriers to exports, which increasingly tend to be services rather than physical goods.

The common goal is to permanently increase overall awareness of how digital transformation through service innovation is becoming critical to stay competitive. These Government-

26 Joe Kaeser, Chairman Siemens A.G., keynote speech at Smart Revolution Forum, Korea Oct 2014

27 Minster Profiles, Swedish Government (accessed 1 Dec 2015), http://bit.ly/1NdbKVR

28 Regeringen vill vässa industrins digitaliseringsarbete, 3 Sep 2015 (accessed 3 Dec 2015) http://bit.ly/1IwaOiA & http://bit.ly/1NxANXk

29 Regeringen vill satsa på industrins digitalisering, INFOTECH, Umeå, 9 Sep 2015 (accessed 3 Dec 2015) http://bit.ly/1Nzx9rK

30 Svensk industri vädrar morgonluft, nyindustrialiseringsstrategi (Nist), 18 nov 2015 (http://bit.ly/1OMJ4Wo)

31 Sweden's Official Export Strategy 2015, Swedish Government (accessed 7 Dec 2015), http://bit.ly/1R4vOQn

led incentives, whether broad or specific, also seek to establish both soft and hard technical skills and mindsets.

Country perspectives – Asia:

Japan: In 2012, the so-called "three arrows" of Abenomics[32] were designed by the Japanese government to break the vicious economic cycle.[33] In 2013, arrow one was established as a massive monetary stimulus, which was redoubled last October. Arrow two was a fiscal stimulus, which turned into fiscal tightening last spring when the consumption tax went up. Arrow three comprises structural reforms aimed at stimulating long-term growth.[34] To boost advanced manufacturing in Japan and its digital transformation to services, a fourth arrow was added to the Abenomics agenda. This engaged the business community in a multifaceted, long-term national project to accelerate productivity growth and innovation in every sector of the economy.[35]

South Korea: Despite highly regulated service sectors, South Korea's Ministry of Education, Science and Technology (MEST) is investing USD 1.5 billion in research networking. The research areas covered include polar technologies, food safety, life sciences, energy and mathematics. This amount is comparable to the Obama Administration's USD 1.0 billion budget for 15 manufacturing innovation institutes.[36] The South Korean government is also promoting its start-up economy with USD 2.7 billion to fund start-ups, while offering tax breaks for big companies that invest in start-ups. South Korea recently came first in Bloomberg's Global Innovation Index, which examines factors such as research and development capability, productivity, tech density, and patent activity.[37]

China: "Made in China 2025" is a strategy that is upgrading China's manufacturing industry by conforming to the trend of so-called "Internet+", which combines informatisation and industrialisation. The key to the next steps is to incorporate Internet+ into industry in order to build the industrial Internet and transform the installed manufacturing base into a more intelligent infrastructure. There is still a big gap between the Internet and manufacturing industry that needs to be filled.[38] In China, service innovation promotion includes a major training programme targeting a broad range of policy makers and businesses. The aim is to familiarise the target groups with specific aspects of service innovation.

European perspectives

Finland: At country level, Finland has made great strides in promoting digital transformation and there are many examples that show how the role of the Government cannot be underestimated. Major strengths of Finland's innovation environment include its stable political environment, human capital and research, as well as its scientific output.

Growth driven government policies focusing on deregulation and liberalisation within the ICT sector have generated competition and a growing entrepreneurial spirit. For example, Nokia started a scheme that supports its former employees who have a business idea in need of backing (300+ start-ups already in 2012). In addition, the Innovation Mill[39] programme was set up to convert thousands of unused ideas and intellectual property rights from Nokia into new products and services. The programme was coordinated by Technopolis, with funding provided by the Finnish Funding Agency for Technology and Innovation, TEKES, and ten Technopolis cities. In its first year (2009), the Innovation Mill created over 200 new jobs and 18 business start-ups, with participating businesses raising over EUR 10 million from venture capital on the stock market.[40]

Finland is clearly becoming a leading digital health hub. According to estimates, the country has approximately 500 companies active in the health sector, employing 20,000 people. GE Healthcare has announced plans to establish a digital health programme at its Finnish headquarters. The main focus will be on developing wireless and portable data transfer technology. Meanwhile, Tekes, has announced that it will collaborate with GE Healthcare, and will be supporting the research programme with EUR 10 million in funding.[41]

32 Abe must keep the focus on his first three arrows, FT.com 27 Sep 2017 (http://on.ft.com/1LNVKJx)

33 Abenomikusu or Abenomics refers to the economic policies advocated by Shinzō Abe since the December 2012 general election, which selected Abe to his second term as prime minister of Japan. Abenomics is based upon "three arrows" of fiscal stimulus, monetary easing and structural reforms.

34 Japan wages: Manufacturing consent, FT.com, 18 Feb 2015 (http://on.ft.com/1LnZB5p)

35 The missing arrow of Abenomics, McKinsey & Company, 15 May, 2015 (bit.ly/1QPJVKm)

36 A Revolution in the Making, Digital technology is transforming manufacturing, making it leaner and smarter and raising the prospect of an American industrial revival, WSJ.com, 10 Jun 2013 (http://on.wsj.com/1y6QWI6)

37 4 Countries That Are Leaving Silicon Valley In Their Tracks, 5 Jul 2014, FastCompany (http://bit.ly/1jzHAAB)

38 Made in China' brands eyeing medium- and high-end market China Economic Net, 22 Apr 2015 (bit.ly/1TfPCCa)

39 Tekes Programs and Collaborations 2016 Accessed 2 Mar 2016 (http://bit.ly/1RnXiMq)

40 Digital Entrepreneurship in Finland, European Commission, Digital Entrepreneurship Monitor 2012 (bit.ly/1RGOSCq)

41 Finnish Digital Health Ecosystem, Medium.co, 2 Mar 2015 (http://bit.ly/1QLm747)

Beyond this, the Pioneers of Service Business programme (Serve) encourages Finnish companies to become global forerunners in the customer-centric, knowledge-based service business. Serve aims to create new knowledge in service innovation and encourages the development of innovative and internationally competitive service concepts in companies by challenging traditional ways of doing things both at strategic and operational levels.

The United Kingdom: Through its Science & Innovation Network, the British government has established a network of 90 people in 25 countries to understand and follow the local science and innovation landscape. When combined with the country's knowledge in science and research, the network also opens up strong, collaborative science and innovation and has an equally important role in underpinning evidence-based international policy dialogues.[42]

A recent study on the UK's engineering sector shows that service and manufacturing-led sectors will add some extra GBP 27 billion to the UK economy every year. However, with a 12–19 percent year-on-year growth of engineering companies in the UK, both manufacturing and service-led companies are reporting difficulties in hiring suitable talent at the grass roots level.[43]

Another important example relevant to this report is the work of Cambridge Service Alliance (CSA). CSA is a unique global partnership between businesses and universities. Its goal is to bring together the world's leading companies in multiple fields and applied academic research to deliver tools, education and insights needed to develop complex service solutions.[44] CSA actively focuses on service innovation through close partnering with a limited number of global companies. Together, they engage in business model innovation, generation of performance information and analytics as well as helping companies make and sustain the shift to become more service-led. Many of the involved enterprises are heavy industrial manufacturers, and with the ongoing digital transformation and shift in customer demands, they too need to become more service-orientated.

Germany: In March 2012, the German government passed its High-Tech Strategy Action Plan. The Plan identifies ten "Future Projects" to establish Germany as a worldwide innovation leader with the ethos that good ideas can rapidly be translated into innovative products and service systems.[45] Among the ten selected projects, one is aptly named Industry 4.0, which represents a paradigm shift from centralised to decentralised production. By making effective use of the Internet, advanced applied technologies, data and services, the project aims to build smart cross-country manufacturing factory outlets. Under the plan, a number of important research and industry actors as well as institutions are working closely together to realise Germany's Industry 4.0 vision.[46]

A second relevant project in Germany's High Tech Strategy is The Smart Service World initiative that is helping the country become the lead supplier of smart services and their underlying platforms. The project's working group brings together more than 150 representatives from industry, the scientific community, trade unions, industry associations and government institutions.

The thinking here is that smart products are no longer sold to perform a function. They are instead sold as services because the outcome of using the product is what matters. Germany actively supports the development and testing of basic technologies that are necessary to build the relevant digital infrastructure. Funding programmes have already been put in place for some of the key technologies required and the list of projects are comprehensive involving companies, expert societies and Government.[47] Furthermore, the Smart Service World is organised in to four sub-committees covering national competence centres, knowledge platforms and reference models for cross-company product and service developments, integrated research agenda and the creation of a digital domestic market.

In the Smart Service World programme, the evolution of services in manufacturing is highlighted. By combining the role of services from development stages, they are then seen as vital supplements for products. Complex systems such as delivery agents of bespoke customer value are made of systems comprising hardware, software and services.

Data-driven services and service platforms function as the

42 Science and Innovation Network Report 2011, Department of Business, Innovation & Skills at Foreign & Commonwealth Office, Accessed 28 Feb 2016 (http://bit.ly/1oQPex1)

43 Engineering UK 2015, The State of Engineering Accessed 1 Mar 2016, (bit.ly/1L1bWaf)

44 Service Innovation: A Perspective from the Cambridge Service Alliance

45 The new High-Tech Strategy Innovations for Germany 2012, Federal Ministry of Education and Research (http://bit.ly/2168m5O

46 Involved Parties: The National Academy of Science and Engineering (acatech), the German Research Center for Artificial Intelligence (DFKI) and the Fraunhofer-Gesellschaft have been providing the major scientific framework for industry initiatives developing and implementing Industry 4.0 technologies for use. With Bosch Group, Siemens, FESTO, SAP AG and TRUMPF GmbH there are major German companies with strong footholds in both ICT and production technology involved., Germany Trade & Invest, Federal Ministry of Economic Affairs and Education, Accessed 29 Feb 2016, (http://bit.ly/1TMAQ5e)

47 Smart Service World – Selected Projects: Autonomics, Theseus, Trusted Cloud, Accessed 29 Feb 2016, Federal Ministry of Economic Affairs and Education, (http://bit.ly/1QQbiEj)

Figure 5: Smart Services: Core elements of service digitisation.
Source: Fraunhofer Institute Presentation at Service Innovation Seminars, Stockholm, Sweden (Feb 2016)

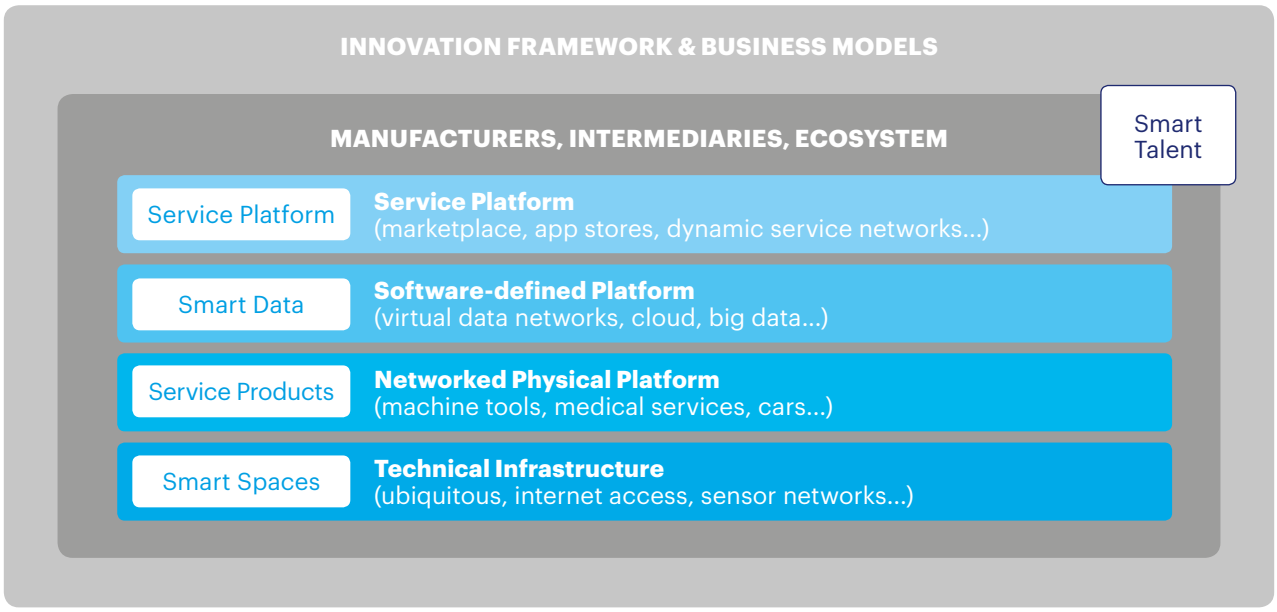


Figure 6: Smart Services – What are they?
Source: Fraunhofer Institute Presentation at Service Innovation Seminars, Stockholm, Sweden (Feb 2016)

Smart Services describe data-based, individually configurable bundles of physically delivered services, digital services and products, which are usually performed on integrated service platforms.

Smart Service features:
- User-centric and very often data-driven
- Extremely agile – short release cycles
- Data and algorithms increase value added: EOS are key!
- Laternal business benefits often come as a side-effect

Smart Service business model components:
- Secure User ID's
- Integrated payment functionality
- Digital ecosystems and market places
- Focused on monetarisation of data
- Cooperation across industry and sector boundaries

main drivers for manufacturing, which in turn forms Smart Service Systems. The initiative's objective is to support Germany in becoming the lead supplier of Smart Services and underlying digital platforms.[48]

Figure 5 presents the core elements of what the Smart Service world means and how the programme's framework can filter through all aspects of an organisation or business.

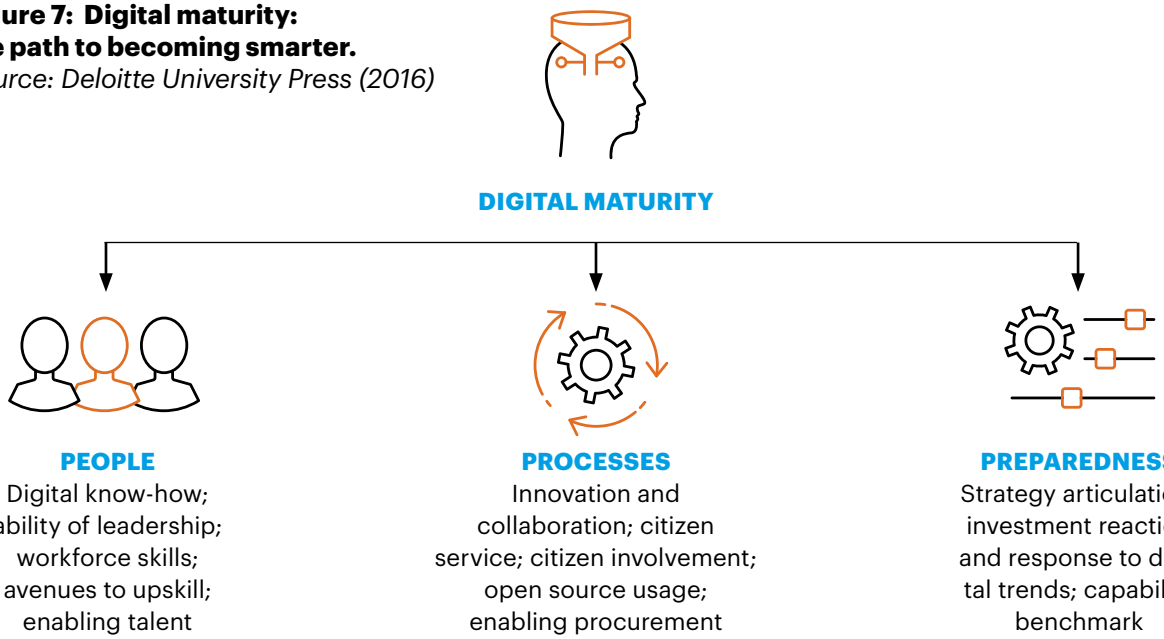
Figure 6 summarises what Germany is aspiring to achieve with the Smart Service World and how it should evolve as an educated force across all sectors of the economy. The first goal is to exploit existing or new data for services and business model innovation. The second is to build a smart infrastructure that can generate the knowledge-intensity in customer offerings.

Clearly, the smart services presented by the German government show how the country is eagerly promoting the urgency of servitisation in all sectors of its economy and is doing so through one integrated approach.

48 Service Innovation Approach in Germany, Walter Ganz, Fraunhofer Institute Seminar, Stockholm, Sweden, 9 Feb 2016.

THE INTIMACY BETWEEN ANYTHING THAT WANTS TO GET SMARTER

Figure 7: Digital maturity: the path to becoming smarter.
Source: Deloitte University Press (2016)



Through various strategic programmes at national level, it has been shown that several modern economies that compare well with Sweden are actively seeking to leverage their current strongholds across national economic sectors.

As previously mentioned, the traditional view of service innovation is that it involves innovating intangible products. A more radical service-logic perspective challenges this view and takes an attribute-based view on innovation. Rather than innovating products and services, the focus here shifts towards innovating customers' value co-creation roles.[49] This service-dominant logic in effect revolves around services as the onset of any form of commercial or non-commercial development work.

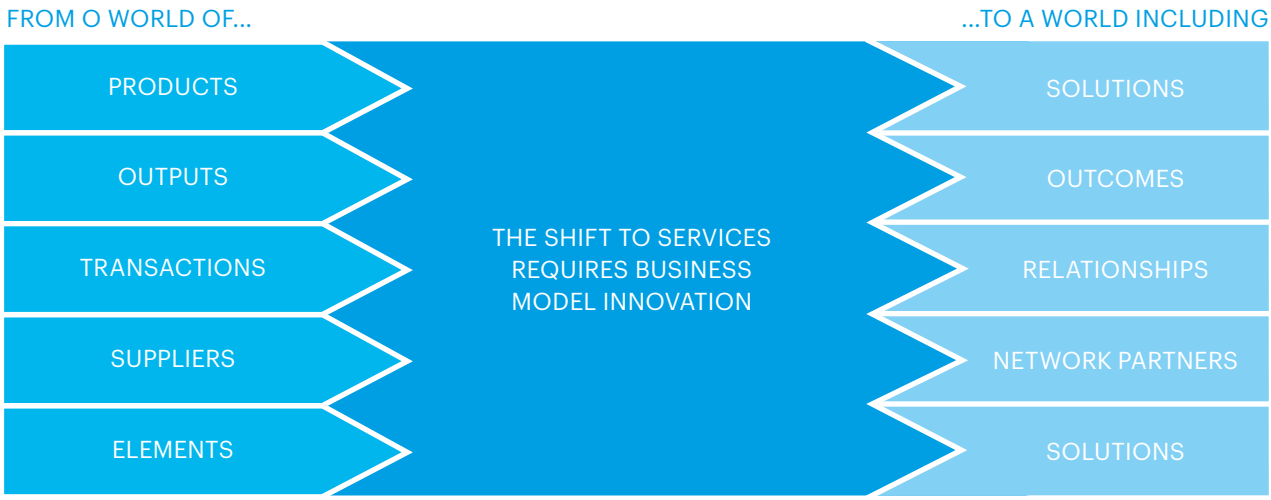
Only a few self-proclaimed pragmatist countries have communicated robust plans to transform the nation's mindsets with bold near-term visions and measurable objectives. Overall, involved countries are at different stages of the learning curve, which opens up opportunities for trans-national policy collaboration between the countries engaged in promoting service innovation, to achieve a service dominant logic.

To this end, a note to self where "self" could be a country, a region, a company, a team or an individual, is to ask how mature the self is to absorb change. Given a relationship where humans and machines get smarter together, Figure 5 presents the various elements in a socioeconomic ecosystem required to mature in order for the country to get smarter. The pace of maturity can be classified as either "early", "developing" or "maturing".[50]

49 Service-Logic Innovation: How to Innovate Customers, not Products, Michel, S. et al, California Management Review, Spring 2008

50 The journey to government's digital transformation, Deloitte University Press, 2 Oct 2015 (http://bit.ly/1PqLEmK)

Figure 8: A transformative mindset to innovate business models for services.
Source: Cambridge Service Alliance, Service Innovation Seminars, Stockholm, Sweden (Feb 2016)



Although the digital journey to maturity for each group in the Figure 7 can differ, the argument is that the merit of a smart factory will be miniscule if it is not coupled with a smart service to design it or the smart products it makes.

The "smartness of things" involves people, processes and solutions, as becoming more digitally mature requires undertaking a multitude of tasks.

Knowledge-intensive services can be deployed to build smarter machines, and thereby smarter products as well as new digital services. Service innovation can also arise as a result of smarter services, as they are "productified", becoming more scalable.

Smart services will in turn be required to build smart factories, which in turn means people and societies must get smarter too. To ensure that we make the most of the "smartness" that is contained within the Swedish institutional sectors; academia, the knowledge intensive service sector, and government programmes can further support the development of services.

A key finding from Cambridge Service Alliance is that the collaboration between companies and Cambridge University helps to shift mindsets. Figure 8 summarises the changing views of industrial manufacturing companies engaged with the Cambridge Service Alliances. These companies took a hard look at their value proposition and changed their mindsets before delivering smarter systems of customer-centric products and services.

CONCLUDING REMARKS

Before concluding, let's consider Uber again. Its technology isn't overly advanced, nor is the service it offers. Uber provides a simple but highly-sought after service; namely a friction-free transportation where the user journey is made by the passenger herself. Uber's nimble business model is what makes Uber. Specifically, when market needs are intersected with technologies, business opportunities are created. In reference to the above, no matter whether innovation is manufacturing-led or service-led, hard or soft, services generate more services. Services are required to design better products, better processes and better production, which in turn creates more services to sell and deliver products.

More services will then be required to build fact-based customer-driven feedback loops to improve the whole value chain of repeating albeit improving each task. Customer data can either be generated by human intervention, or as a result of a series of smart self-learning and interconnected systems. In this circular setting, far more spill-offs can help enable new technologies and applications while creating the commercial frontier. Businesses need to become circular, service-intensive and innovative. Political leaders need to support and stimulate the enabling requirements so that far reaching industries, universities and societies can take action.

In Sweden, much of the service innovation promotion has been about improving framework conditions. The Swedish e-government services, in which citizens use digital applications for public services, exemplify how service innovation has been promoted in society. The privatisation of home nursing and the retirement home sectors in Sweden has also lead to an expansion of service innovation which demonstrates how retirement home operators can improve patient experiences. This has provided much needed stimulation for new service development and innovations in the public-private interface. What remains is to focus service innovation promotion in Sweden in order to stimulate knowledge-intensive high-value adding sectors. This can be achieved through introducing reforms that go beyond funding programmes.

As described earlier, the Swedish government has been active in funding various strategic initiatives to promote innovation. VINNOVA and the Ministry of Enterprise and Innovation have been leading these schemes. While funding is made available, the resulting returns and value should be more carefully measured. What value is the Government aspiring to see for the funding it offers? Looking at how countries like Germany have engaged in promoting digital transformation, it appears that programmes that have forcefully communicated the development of service innovation in an integrated fashion are the ones that can have a positive impact on all of the country's economic sectors.

Moreover, while Sweden is globally competitive due to its automated high-value adding manufacturing sector, this systemically accumulated knowledge must be better recognised and utilised. The current tech-driven global economic situation opens up critical opportunities for Sweden to develop new skills and services both in the early and late stages of the business eco-system. Here, the development of knowledge-intensive services will play a central role in creating value and jobs. Increased service content and digitisation will therefore become vital applications.[51] A Government keen to fund innovation should also look at funding the establishment of an integrated infrastructure that makes innovation ubiquitous across all economic sectors.

As already stated, Sweden is technologically capable, competent and has a highly educated customer base. Services already make up a significant proportion of the economy and its annual growth. Sweden holds a number of good examples on service innovation. However, the governmental support have mainly been geared towards the public sectors and thus domestic. We therefore see a need for stronger support aimed for the vital export-led branches of the economy. Supporting service-led business development in the ecosystem where Sweden's export-led industries operate is equally crucial. The spill over effects and potential spin-offs can also lead to the creation of new sectors such as the gaming industry, or radically change in traditional sectors, like the music industry. Sweden has many home grown examples of this in companies such as Minecraft, Klarna, Spotify, SoundCloud, Prezi as well as Skype. Each company solved a traditional business problem and expanded globally by embracing knowledge-intensive service led innovation.

It is with a Golden State of Mind that we invite the Swedish Government, Sweden's market influencers as well as non-markets forces to take ownership and responsibly serve the nation's best interest for the long haul. We believe that this can only be done by collaborating under one umbrella, and one agenda that fuels, stimulates and drives Sweden so that it pioneers, competes and wins a service innovation-led strategy for all of its export-led economic sectors. Sweden's economic prosperity is mainly built on sectors that are and have historically been export-led. This country depends on its export-led sectors and this will not change. The service-content of Swedish exports is ever increasing and now makes a substantial part of the export economy. Export-led sector companies are not misunderstood in their motivations to undergo the required service-led digital shift. We would however argue that this movement needs acceleration through a Government-led service innovation programme that integrates all sectors of the economy.

The global economic cycles are shortening; competitors are moving faster assuming a winner-takes-all while buying consumers, be they professional or private, are getting smarter. Today technology is widely accessible and much more affordable than previously. Sweden cannot compete on price and its direct global competitors have never waited for Sweden. These prerequisites will not change. So, why doesn't Sweden while it still can?

51 Utan en värdeskapande tjänst tappar en produkt sitt värde, STD.se 12 Nov 2015 (http://bit.ly/1W5T7fS)

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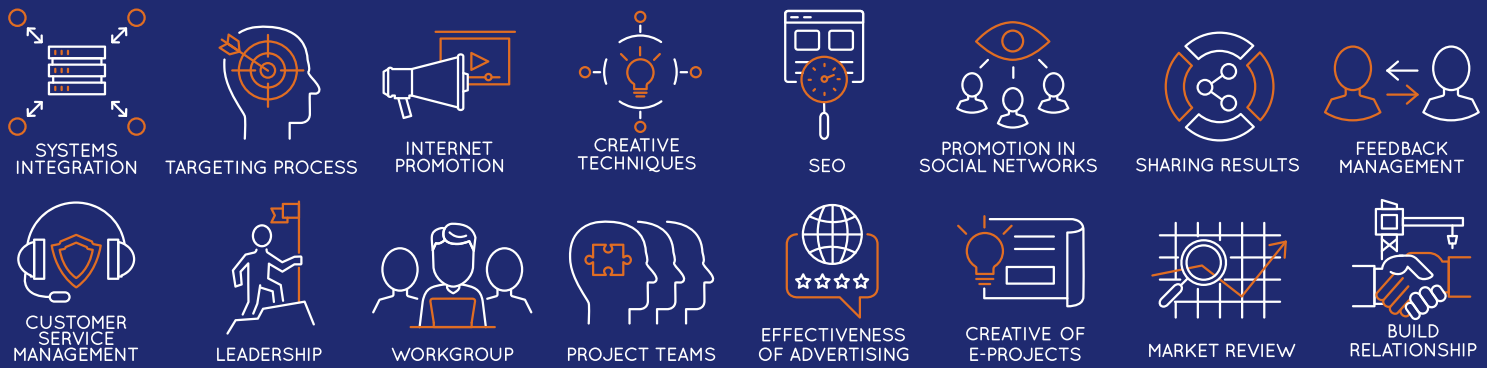

Service Innovation Sweden is a national mobilisation that is taken in order to create a platform for exchange of experience and knowledge sharing in relation to service innovation, digitalisation and value creation. This initiative is a joint venture between **Almega** (the Employers' Organisation for the Swedish Service Sector) and **Teknikföretagen** (The Association of Swedish Engineering Industries) with the financial support from **VINNOVA** (Sweden's Innovation Agency).

With **Service Innovation Sweden** our ambition has been to open up for new forms of cooperation and collaboration as well as new ways to share knowledge and good examples. In February 2016 we therefore arranged a seminar to highlight some international examples and from there discuss what Sweden can do to measure up and make the most of the opportunities that comes with digitalisation. With this report we want share some examples of on going initiatives, both government and industry led, that we find interesting. With this report we would also like to emphasize the urgency for Sweden to gear up, as we see the key to Sweden's future prosperity in the smart solutions that lie within service innovation.

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