



*Pierre Audoin Consultants*

## **D3 – Baseline Scenario for 2020**

### **Economic and Social Impact of Software & Software-Based Services**

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## EXECUTIVE SUMMARY

This report follows on the work presented in the D2 report as part of the “Economic and Social Impact of Software and Software-Based Services” in Europe.

The objective of this document is to project the most likely economic and social impact of the EU SSBS industry on Europe (EU27) in the next 10 years from now, with a specific focus on the impact of the development of the *Internet of Services* on this industry.

In this rapidly changing environment, the second objective of this report is to identify the barriers for the development of the European software and software based service industry and to determine policy measures to remove or mitigate them.

### **SSBS within the context of the Internet of Services**

In this part, the Consortium focuses on the current impact of the Internet of Services (IoS) on the SSBS industry and market. The goal here is to present the state of the art as of 2009 from a definition, segmentation, market sizing as well as nature of the different players that are active in this industry.

The first step in the definition of the SSBS industry within the context of the emerging Internet of Services is to define “Internet of Services”. After briefly reviewing the literature on this matter, the Consortium will retain the following as a definition of Internet of Services: *Generic services that can be automated and optimized through the use of ICT, delivered leveraging Internet platforms and that can be combined in order to provide value-added services to services users.*

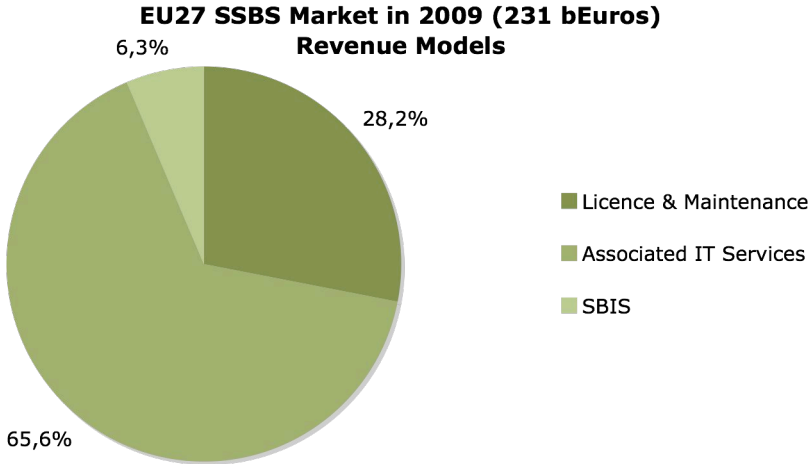
We then make a clear distinction in between Software-Based Internet Services (SBIS) and Software-Enabled Internet Services (SEIS) that are the two constitutive segments of the IoS (  $IoS = SBIS + SEIS$  ). SBIS is the part of the IoS that is of critical interest to the current study. Such services cover capabilities for which the value to the customer is intrinsically related to the IT resources that are delivered via

the Internet. These include the use of software and infrastructure resources such as the ones delivered in IaaS (data storage, computing power...), PaaS (software development and integration capabilities...), and SaaS (Customer Relationship Management, Human Resources... capabilities) models.

SBSS has been defined in the D2 report with Paid-Web-Based and Online Advertising as two emerging segments rendered possible thanks to the Internet. The SBIS market corresponds to revenues coming from Paid-Web Based and Online Advertising as defined in the D2 report. Most of those activities are generally made available through the World Wide Web, but more and more services can be accessed directly with widgets, thin clients or direct integration into databases.

In the D3 report the Consortium emphasizes much more on this SBIS segment, the part of the SSBS industry that is also part of the Internet of Services.

The Software-Based Internet Services market is still relatively small in size compared to the more traditional SSBS revenue models: Licence & Maintenance and IT Services. In recent years, the pace of growth of the SBIS segment was 4 to 5 times faster than the growth of traditional segments.



The SSBS market size in the EU27 area is estimated at about 231 billion Euros in 2009. A detailed analysis of the trends and growth drivers for each segment can be

found in the D2 report<sup>1</sup>.

In the D3 report the Consortium details how the advent of the Internet of Services impacts the development of the SSBS industry and its players in particular. For the sake of this exercise 5 types of players have been retained: Independent Software Vendors (ISVs), IT Services providers, Telecom operators, Internet players and other companies that are not part of the ICT industry, but can sometimes partake in the SSBS industry by selling software that they have developed.

The Consortium gives a thorough description of these categories of players including their activities, business models, and positioning in Europe.

This first part sets the stage for the remaining of the report that focuses on giving indications on where the SSBS industry and markets could evolve in the next five to ten years.

### **Key Techno enablers for the future development of the SSBS industry.**

Numerous technology trends could have a major impact on the development of SSBS and SBIS in the coming years. Depending on their availability on time, their cost and their level of adoption by end users (niche or mass market), they could help or not to accelerate the growth of the overall SBSS market and especially its Internet of Service part. They can therefore have a major influence in the development of the market, and need to be taken in account for prospective scenarios.

There are two main kinds of technology trends to analyze:

- Some of those technologies are new software technologies that could represent new market segments and new opportunities in the SSBS industry. Most of the time, they would rather be combined or integrated with other technologies rather than made available as standalone. Their development is therefore dependent of the SSBS itself, for which they are internal growth drivers. They would most likely be used as a lever for a faster growth.

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<sup>1</sup> [http://cordis.europa.eu/fp7/ict/ssai/study-sw-2009\\_en.html](http://cordis.europa.eu/fp7/ict/ssai/study-sw-2009_en.html)

- Other technologies will develop almost independently of the SSBS industry. They would be more enablers to ensure a faster development of the software rather than pure software technologies. While SSBS industry needs could accelerate their developments (by helping to find sustainable business models), their development should be seen as exogenous as their availability will depend also heavily on other industries (like other ICT industries like contents or communications, or even non-ICT industries). Their development is also dependent on technology breakthroughs related to physics, mechanics or energy management.

In this second part, the Consortium presents what we believe will be critical technologies and concepts for the future of the SSBS industry.

- Artificial Intelligence (AI)
- Semantic Web
- Information Management
- Digital ID
- Interoperability
- Ubiquitous Networks
- RFID
- Security
- Datacenter
- Ultra-Broadband

These techno-enablers are part of the important underlying technology forces that will drive the evolution of the SBBS industry in the next years. We explain then how these impact our foresight scenarios (baseline and theme scenarios) that will be presented further into the report. Some technology drivers have been in fact directly integrated fully in the baseline scenario, especially for technologies with limited interaction with the theme scenario. Other technologies are already included in the baseline scenario, but not to their full extent. They are indeed either the leading driver of one of the scenario, or offer some additional leverage on one or two theme scenario.

### **Emerging markets and their potential impacts on the SBIS Industry**

The following part focuses on the emerging SSBS markets identified in the D2 report. The Consortium focuses here on the interactions in between these fast growing markets and the development of the SBIS. In particular, we explain for each emerging market the current positioning of the SSBS players (ISVs, IT Services

providers, Telecom operators, Internet players, and Others) as well as how their positioning should evolve in the future in these markets.

#### *The Winners: Internet players*

Internet players will benefit the most from the evolution and development of the different emerging segments presented above. In theory, they are the best positioned to benefit from the development of SBIS and the impact of Internet of Services on the SSBS industry. Most players are from origins outside of Europe. There are European players in this category (cf. the definition of this category of industry players in Chp. 1.3.4.2) with OpenPortal, RunMyProcess, Sidetrade, EtapOnline, Oodrive, Synertrade, Datev, Onventis, Talentsoft... – which are born with the Internet and rely mostly on paid-web based solutions – although their number is small and they currently lack a strong visibility on the market. They should grow rapidly in the next few years.

#### *The Challenged: ITS and ISVs.*

The incumbent players are facing major shifts in the market: shifts in demand, shifts in the competition with new types of players entering the market. Not surprisingly, they – especially the larger players – are against this flow of change, which can represent a real threat to their business models and the recurring revenues that they have in place in the run and maintenance of their clients information systems. They today represent the vast majority of players in the industry. They will have to evolve though in the coming few years and reposition their activities in a renewed SSBS ecosystem.

#### *The Challengers: Telcos*

These players are positioned to benefit strongly from the evolution of the SSBS industry within the context of the Internet of Services. They are a crucial piece of new software delivery models as they own part of the infrastructure. Their role in the strengthening of the European SBIS industry could be critical in this space. Whether or not they can embrace the SBIS models at the application level remains to be clarified, though.

#### *Others*

Emerging models (OSS, Cloud...) enable them to enter the SSBS industry. This raises the difficult question of identifying these new players in industry statistics.

### **SSBS industry competitiveness**

The main determinants and patterns of European SSBS competitiveness have been examined by looking at: factor conditions of production; related and supporting industry; and industry strategy, structure and rivalry.

The analysis of the factor conditions has shown that the US had the largest stock of the ICT researchers in 2006. Comparably, the EU15 (approximately 180,000 researchers) had three times less ICT researchers, and Japan, with 30,000 ICT researchers, ranks third. When looking at the proportion of science graduates per 1000 inhabitants, the largest figure was found in France, Finland and Ireland, and most EU countries outperformed the US according to this measure. The analysis of the capacity for innovation and quality of research shows the US as the country with the highest score, but only slightly higher than Belgium, Germany, the UK and Finland. Finally, the score on availability of the venture capital funding across countries is found highest in the US, although some leading EU countries (Netherlands, Finland and the UK) are only slightly lower than the US.

The analysis of the supporting industry and other related factors shows that The EU 27 lags behind the US and East Asia in fields of: financial services; information society; innovation and R&D; liberalization network industries; enterprise environment; social inclusion; and sustainable growth. However, individual countries within the EU perform better than the US. Namely, Sweden, Denmark and Finland outperform the US in innovation, financial services, social inclusion and sustainable development. In terms of the IT sector analysis, the US has a leading position in terms of innovation followed by Denmark, Sweden Finland and the United Kingdom. The supporting industry of broadband and mobiles is well developed in the EU and in some cases with subscription rates higher than those in the US (Denmark and Norway in the case of broadband, and Italy, Greece, Luxemburg, the Czech Republic, Portugal and the UK in the case of mobile). The perception of intellectual property protection in the EU is high, and in the case of the most developed

countries, within a similar range to that of the US.

The analysis of industry strategy, structure and rivalry factors shows that the software industry is characterised by very different typology of companies. In particular, few large companies account for a large share of the total sales revenues. The same is true for the expenditures amounts on R&D investments. However, it is interesting to note that small companies make similar or larger contribution to R&D investment when analysed in relative terms (R&D investment per employee). Overall the findings indicate that the software sector is characterised by economies of scale, and network economies play a major role in determining the position of the company in the market. There is also little turnover in the companies positioned at the top of the ranking.

*The implications of this is that past experience shows that it has been very difficult to gain leader positions in the software sub-sector, and less so in the internet and computer services sub-sectors. **It is unlikely that, under current circumstances, existing market players will be successful in gaining the top position.** The opportunities will come in the provision of new services where new business models are developed, such as emerging segments in the software industry. However, the **success of new market players will be limited by the extent to which size, network effects and reputation will dominate in the new industry that is emerging.***

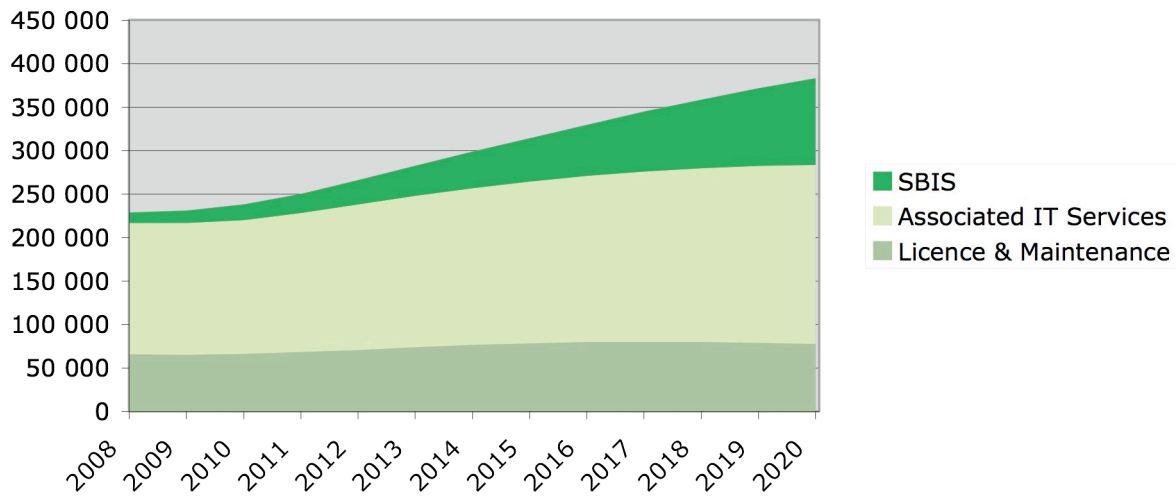
## **SSBS and SBIS – Foresight 2020**

This part presents the main results of the forecasting exercise for the SSBS market in 2020.

### *Market sizing in 2020*

The following graphs and table present the evolution of the different SSBS market segments for the 2008-2020 period in the EU27 region. This is the baseline scenario of the SSBS market development for the next 10 years.

SSBS Market in EU27 - 2008-2020 (Million Euros)

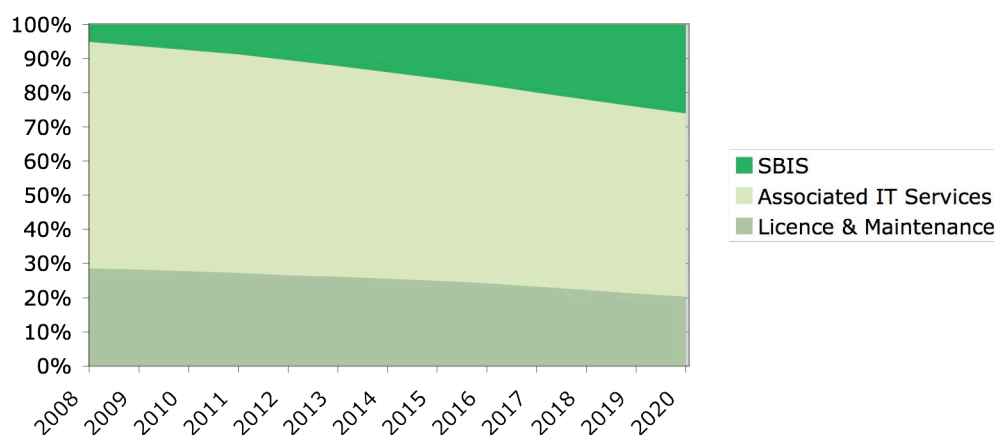


In the baseline scenario, the SSBS market in the EU27 region goes from **228.7 billion Euros** in 2008 to **383.5 billion Euros** in 2020, a **4.4% CAGR** over the **2008-2020 period**.

Segments	Market share 2008	Market share 2020	CAGR 08/20
Licence & Maintenance	28.6%	20.3%	1.5%
Associated IT Services	66.2%	53.6%	2.6%
Paid Web Based	5.2%	26.1%	19.2%
<b>Total SSBS market</b>	<b>100%</b>	<b>100%</b>	<b>4.4%</b>

## Evolution of the emerging segments share compared to the rest of the SSBS market

SSBS Market in EU27 - 2008-2020 (Million Euros)



During the 2008-2020 period, the structure of the SSBS spending by companies and administrations is changing dramatically as the weight of traditional revenue models (License & Maintenance and Associated IT Services) is decreasing in favour of the Software-Based Internet Services that include Paid-Web-Based and Online Advertising models.

Whereas average annual growth rates of the SBIS segment remain very dynamic in the 2008-2020 period in this baseline scenario, market shares will likely remain in the 25-30% range in 2020. In fact in this scenario, *which is the most likely*, these models do not swipe the traditional models out, the latter having still a positive, although limited growth over the same period.

### SSBS market in 2020 - International Comparisons

Geography	Market Shares		CAGR 2008/2020
	2008	2020	
EU27	32%	28%	4.4%
North America	39%	33%	4.1%
APAC	17%	21%	7.8%
Rest of the World	12%	18%	9.3%
World	100%	100%	5,7%

SSBS spending growth in the U.S. in the baseline scenario is in line with the growth

in the EU27 region. In Asia (including Japan) as well as in the rest of the World, SSBS spending growth is estimated to be about twice as fast as the EU27 growth. *In particular the SBIS market will develop much faster than in Europe or in the U.S as legacy systems and investments are not as developed as in the old economies.* Therefore, APAC companies buy in the SBIS models more easily than U.S. or European companies. Hence, market share of mature countries will decrease in the 2008-2020 period, to the benefit of the Emerging countries in Asia Pacific (APAC), Eastern Europe (outside of the EU27), Latin America and Middle East Africa.

### *SSBS Market – Four Theme Scenarios*

The baseline scenario represents an extrapolation of the most likely route of ongoing development and innovation trends. Some of the assumptions embedded in the baseline scenario have high level of uncertainties regarding the rate of these segments' development in the future. In order to better comprehend the potential impacts of the development of selected market forces, we have built four theme scenarios, each focusing on the intense development<sup>2</sup> of one particular market force.

These theme scenarios have been selected for different reasons:

- **Cloud computing** – this segment is at the core of the SBIS industry. One of the key objectives of this project is to better understand the impact of the development of the Internet of Services on the software industry in Europe. This theme scenario looks at how the market and industry will look like if the development of Cloud computing is more rapid than in the baseline scenario.
- **Mobility** – with the rapid diffusion of portable devices to consumers and professionals, SSBS players are finding new ways to use software technologies and, more importantly, new business models made possible by the combination of the internet, software technologies and the capability to use the software-based service wherever the end-user is located. This theme scenario examines the additional growth that could impact the SSBS industry if the development of mobile

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<sup>2</sup> *In the CHAPTER 2 we have presented some of the key techno-enablers that underly the development of these scenarios.*

applications is faster than in the baseline scenario.

- **Open source** – as presented earlier in this document OSS is one of the key enablers of the cloud computing models. It is also a model that potentially destroys value in the software product industry. This theme scenario looks at the potential impacts a stronger development of OSS technologies could have on the SSBS market and industry.
- **Offshore** – Offshore is not a market segment in itself. It is a constraint of the IT services market, a key component of the SSBS market. In the D2 report, we have explained some of the risks and potential benefits of the offshore delivery models. This theme scenario takes a quantitative approach to the question of the offshore models and looks at the potential impacts on the SSBS market and industry if these models were to develop faster than in the baseline scenario.

These theme scenarios have differentiated impacts on the overall growth and development of the SSBS market. Mobility is the only one presenting a positive  $\Delta$  compared to the overall SSBS baseline scenario. This is in fact one of the major growth opportunities for SSBS players in the coming years as it will strongly impact the usage of software technologies.

The three other theme scenarios yield a reduction of the overall SSBS market in 2020, although it remains limited: less than 10% even for the offshore scenario which produces a very strong development of the offshore models during the 2013-2020 period. Cloud computing, open source and offshore market forces all have negative impacts on the growth of the SSBS market in EU27 compared to the baseline scenario, mostly because they give in important price reductions on SSBS products and services.

What can be seen as a paradox is explained by an interesting phenomenon that can be found in the overall IT market: the positive price elasticity of IT products and services. Numerous examples exist in the literature explaining this occurrence that sees demand in IT products and services increase when their prices decrease. Offshore, open source and cloud computing all have a strong negative impact on prices, although as a result, the value destruction is not as important as one could have expected. In effect, this price decrease triggers some additional value creation

in the market through for instance, new projects that were not economically viable before, projects in SMEs for which investments were too important, or just because these new models have made some room in the IT budgets of companies that can continue to invest more on a domain that continuously yields great value for its business and its activities.

**Cloud computing** – part of the SBIS segment – is the one market factor that has the highest impact on the SSBS market structure with direct and indirect impacts on the costs of IT resources, both at the infrastructure (storage, hosting, computing power...) and application (custom software development, application maintenance...) levels. This represent **important opportunities for customers** as it reduces the total cost of ownership of Information Systems and consequently **lowers the barrier to acquisition of IT systems** for the (smaller) enterprises.

This also represents – **in theory – important opportunities to SBSS players** of all kinds as they can provide their software and services to a larger number of customers. However, these models are also **major threats to their existing business models and recurring revenue streams** as it reduces the overall growth of the market (cf. theme scenarios). Subsequently, it comes at no surprise to see large, leading, traditional SSBS players (both ISVs and IT Services providers) being relatively reluctant to rapidly and thoroughly embrace the cloud computing models.

These models offer nonetheless a crucial opportunity for smaller, more agile providers in Europe to distribute more easily and in a more cost effective way their software solutions to European customers.

### *SSBS players in 2020*

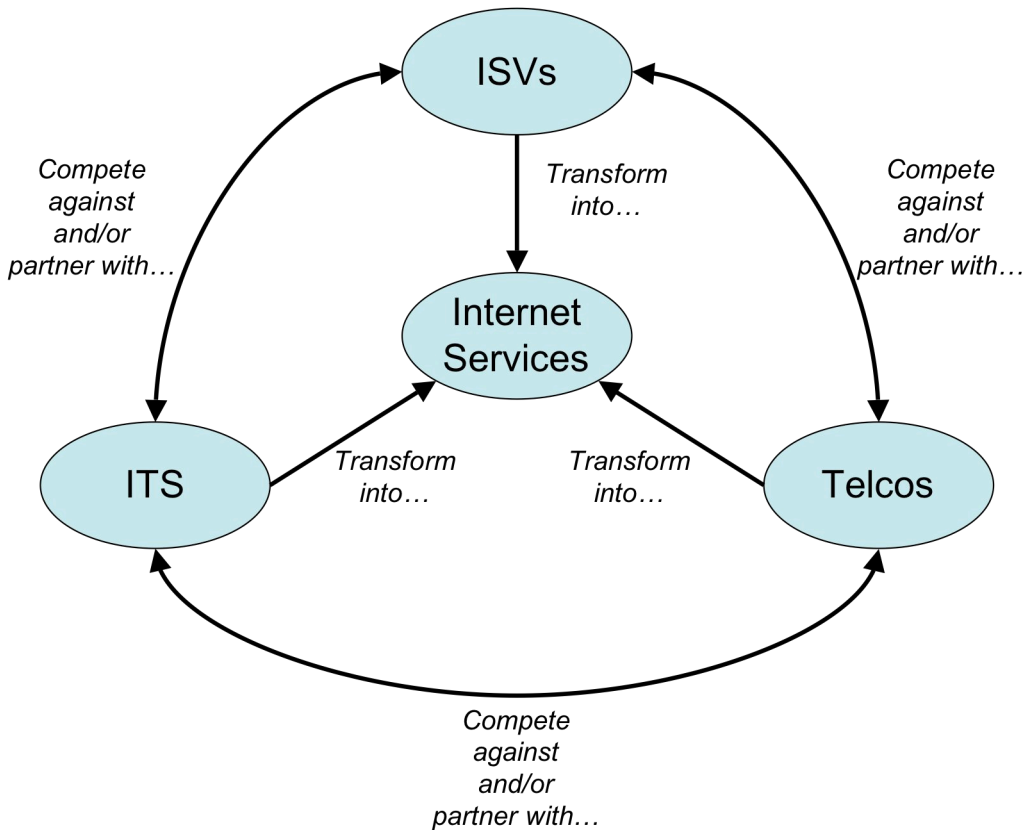
Looking at the next ten years, the SSBS industry should remain a dynamic one with massive growth opportunities for all players. Two major trends should nonetheless be more prominent than the other ones:

- **Serviciation** – the move towards services – all actors will transform their business models towards activities under an “as-a-service” mode. These services might be based on reusable components and solutions – for the sake

of profitability, and time to market – however the clients will buy services in the end.

- **Internetization** – the Internet will emerge as the prominent delivery channel for the SSBS industry. All players will have to transform themselves in order to embrace this new delivery mode.

These evolutions are represented in the following figure:



### *SSBS 2020 – future jobs contribution*

Using the supply forecasts elements provided in the DG Enterprise’s e-skills study (“Monitoring the e-skills demand and supply in Europe”<sup>3</sup>), the SSBS study team developed a growth baseline scenario for the total number of SSBS jobs in Europe.

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3 The full study report is available at: <http://www.eskills-monitor.eu>

Baseline scenario	2008	2020	CAGR 08/20
Total SSBS jobs	1,715,000	2,400,000	2,8%

### *Expected social contributions*

The future social impacts are addressed in a qualitative way, in order to give examples of the contribution that a different pace (slow, medium, fast) of SSBS development could bring on the adoption of software technologies within the nine key social domains that were identified and presented in the D2 report (e-government, e-inclusion, transportation, security, economic processes, sustainable development, health and education).

A few additional percentage points of growth can make a big difference in the diffusion and subsequently the usage of software technologies in the European society. The correlation is true for economic processes (mostly via productivity increases and top line growth via innovation) but also for other social domains and the quality of life (sustainable development, transportation, health...) of European citizens.

### **Outline to barriers and Policies for the development of the European SSBS industry**

As shown in prior sections the market for software and software-based services is starting to change. Related industrial policies also started to change in recent years. In this context two developments have to be taken into account in the analysis of barriers and possible policy measures: the re-emergence of industrial policies and the shift within industrial policy towards an innovation-driven approach.

Given the current structure and the expected future development of the SSBS industry ***our analysis focuses on the emerging segment of Software-Based Internet Services (SBIS)*** for several reasons. The main aim is to develop a future-oriented innovation-driven industrial policy as part of a European Software Strategy that enable the European SSBS industry to foster innovation, new businesses and

markets. Within our time horizon of ten years the rise of the SBIS sector is the most significant development. Moreover the structure of the existing SSBS industry that is mainly dominated by American companies cannot be changed easily. Finally ***the emergence of SBIS offers a window of opportunity for changing this situation in the medium and long term.***

To achieve this aim we follow a three-step approach. The first step aims at collecting, reviewing and analysing existing background materials, such as documents about EU initiatives like i2010, the New Industrial Policy or the ICT Task Force, as well as on recent studies and position papers on the European SSBS industry and to some extent EU ICT industry. Based on this we carry out an empirical analysis that is itself two-folded. In a first part we conduct ***a series of 55 face-to-face and telephone interviews*** where we asked SSBS stakeholders to assess the barriers and measure and possibly add new ones. In a second part the results of this interviews are complemented by a ***workshop with stakeholders and policy makers***. The workshop will validate, enrich and if possible or necessary specify the results of the interview process. Finally, in a last third step, we will develop a method to determine which policy measures that are significant for the European SSBS and especially SBIS industry can be addressed with specific measures for them. This report covers an overview on the work done in the background analysis as well as the results from the interview process.

### Identifying barriers and measures

Given the constantly growing importance of information and communication technology and especially of software based technologies in the last decades it is no surprise that the number of policy documents related to the ICT and SSBS industry has significantly grown in the recent years. As a result a various number of documents exist, which cover a broad spectrum of viewpoints from different stakeholders, including policy makers, industry representatives, national industry associations as well as user industries and customers. In a first step we analysed these studies to extract them and build a framework based on the SI approach to consolidate them. Stakeholders assessed these results during the interview phase.

For that purpose the identified barriers as well the measures or respectively clear objectives for measures were classified into four categories (technical, economic, social and cultural, legal and policy). The preliminary results are presented below.

#### *Technical barriers and measures*

**Interoperability and standardisation** are considered as the most critical barriers for the current as well as the future development. The results underline especially the high importance of interoperability for software and software-based services.

Less prioritized, but also often named was **security**. Although these topics are already addressed within the framework of industrial policies, they have specific dimensions for the SSBS sector that can be addressed by additional vertical measures.

Other relevant results are the current importance of **mobile broadband** as well as the raise of **lack of cloud infrastructure** and **Internet governance** as topics in the future. These developments seem to be especially relevant for the development of the take up and the future development of the SBIS segment.

Given the strong emphasis as barriers for the European SSBS industry it is clear that **enforcing interoperability** and with some distinction the support of standardisation processes are the most named measures. But while interoperability has a distinctive dimension in software and services, the support of participation in standardisation processes is **already covered by other horizontal measures**.

**Broadband availability** and **support of software engineering** reach also a considerable size and priority. In the case of broadband especially the support of the mobile broadband infrastructure, which is essential for the take up of important segments of SBIS, has a clear importance for the sector. The support for software engineering programs that refers to the obstacles of security and critical information systems is very specific measure for the SSBS sector. Especially since the acceptance and adoption of new software and services delivered by the Internet the **need for reliable and secure products and services is crucial for the uptake of SBIS in Europe**.

#### *Economic barriers and measures*

Not surprisingly, the current **economic crisis** is considered to be the most important barrier for current development. This judgement may incorporate a bias and as a consequence it should be excluded for long-term strategy considerations.

A more long lasting and also often named and prioritized barrier is the **market fragmentation**. It is a **general topic**, which is already addressed in different horizontal measures, because of the particular importance of network effects and the fact that stakeholders expect a growing significance in the future. In parts this judgment is also significant for the low adoption of SSBS/SBIS by SMEs.

A more particular barrier for the SSBS sector is the problem of **investment cycles**, which will grow in the future. Also the importance of the **level of R&D spending** and the **competition through offshoring** will rise in future. While the particularity of offshoring for the SSBS sector is obvious, the low level of R&D spending is a general problem that has already been taken up by several measures (Lisbon goals).

Special characteristics for the SSBS and especially the SBIS markets are the **commodization** and the **lack of revenues due to copyright infringement** and cannibalization, which have a low level of priority at the moment, but the growth in the future shows the need for actions.

The relatively low results for **the access to credit and financing solutions** are interesting, because in other studies of the overall ICT sector this was always considered to be one of the major problems. In opposite to this the ease of access to it and the **support for seed and venture capital** are highly required objectives for economic measures. Although there are initiatives at a horizontal level, there are possibilities for specific measures targeted at SSBS and especially SBIS companies.

More different is the situation in the field of **support for SSBS SMEs**, which is the most desired objective for measures. Because of the fact that the support of SMEs is a goal of the overall EU economic policy, there are several initiatives ongoing. In contrast, the **awareness for SSBS** seems to be particular for the SSBS sector as it has not been addressed yet.

#### *Social and cultural barriers and measures*

There is a high prioritization of topics related to **skills and education**. It addresses

SSBS companies (technical and managerial skills, entrepreneurship) as well as user's skills. They all have already been identified and addressed before. Only the growing significance of particular **managerial skills** is not represented in existing studies.

Also often named as a current and a future barrier, but less prioritized was **the lack of cooperation between research and industry**. More particular for SSBS and SBIS are the barriers of **change management** as well as **the lack of trust and privacy concerns**. While change management is a clear barrier for the growth of the European companies, trust and privacy concerns are more ambiguous, because they can also be considered as a chance. A more user-oriented software development with respect to trust and privacy can be a competitive advantage for European SSBS firms.

Only governance issues seem to be a possible topic in future. As a consequence there is also a strong emphasis on skills and education within the measures. Especially the **technical education** in schools and the **promotion of management skills** for SSBS firms show a clear need for more and better educated professionals in the SSBS industry.

Although several measures at broad level have already been undertaken, there are some possibilities to shape or complement them with **specific actions for the SSBS industry**. This is also valid for the **promotion of e-skills for end-user**, which should be expanded towards new required skills in Internet services. Concerning the emerging segment of SBIS areas like trust, data protection and security have a high importance. There are several possibilities to act in support of the take up in these services.

#### *Legal and policy barriers and measures*

One major priority is the **low level of R&D** either in form a lack of R&D funding or in form of a lack of tax incentives for R&D. The other priority is the **lack of support for innovative SSBS SMEs**. These barriers are only partly specific for SSBS. Another point of importance is the **lack of legal harmonization**, which has a specific significance for the SSBS and SBIS and which will rise in future. This is underlined by the fact that the lengthy regulatory processes that hinder dynamic firms and markets

refer also, but not exclusively to similar problems and will also rise in the future perspective. Although both are general barriers they contain several issues that are specific for SSBS and especially SBIS. In parts this also applies to the problems with ***cross-border-operations*** and ***internationalisation***.

In contrast the ***lack of procurement policies*** is considered to be a declining obstacle, though it has in parts high relevance for especially SBIS. ***IPR regulation***, which has a great specific component for SSBS, is also seen as a topic that will gain of importance in future. On the level of policy and legal measures two fields of actions outreach the other. One of them is the support of R&D either by more funding or by tax incentives. While the latter is neither SSBS specific nor part of the regulative set of the EU, the increase of R&D funding on EU level is already implemented. The other area is the ***harmonization of the internal market***. Although this is already addressed on broad horizontal level with the single market strategy, there are some points that are of high relevance for their further development of SBIS like the VAT regulations.

Also highly prioritized is the ***support for SSBS SMEs***, where specific measures for SSBS SMEs could complement the horizontal measures for SMEs. Less prioritized are the establishing of ***SSBS clusters*** and the reduction of regulatory issues for SBIS. Somewhat surprising is the low level of ***IPR enforcement*** and ***public procurement***, which both can have great significance.

## Summary

Concluding we can state that some of the prioritized barriers and measures are topics that are due to their non-specific character like SME promotion or single market that are already addressed by horizontal policies. Furthermore these results for current and future barriers confirm to some extent the results from other studies. In some of the cases like interoperability, procurement or the lack of access to finance it is possible to use supplementing respectively complementing measures or instruments to encounter SSBS specific obstacles. But there are also several prioritized issues, especially for the future development, that directly deal with SSBS and SBIS specific problems. ***There, specific measures and instruments are***

***possible.***

## Outlook

These results will be presented in a policy workshop where they will be discussed among stakeholders' and policy experts. The aim is to ***consolidate, enrich and if necessary specify the results.*** The second aim is ***to discuss the results in the context of the existing framework of (industrial) policies*** within the EU to identify more barriers and measures that are ***specific for the European SSBS and especially SBIS industry.*** In the final step of this phase we will develop and apply a matrix approach based on methodology introduced and integrating the EU industrial and innovation policy framework to ***select a list of operational and coherent policy instruments.*** In the following final phase of the project the potential economic and social impact of these policy measures will be assessed accordingly to the impact assessment guidelines of the EU.