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IMPLEMENTING SOFTWARE AS A SERVICE: THE IMPACT OF MODERNIZING TRADITIONAL REPORTING TOOLS FROM DELOITTE'S PERSPECTIVE

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Abstract

The below paper's goal is to better understand **how a consulting firm can help small and big companies around the world in the implementation of digitalized software to switch traditionally manual processes towards more connected, cloud-based solutions.** Through the introduction of Software-as-a-service (SaaS) and the analysis of a practical example of the consulting giant Deloitte, the reader discovers how digitalization first entered the entire financial sector, how implementing such SaaS tools might necessitate the help of external consulting firms and ultimately that connectivity and the usage of a cloud-based solution became a requisite for a company's success.

Keywords

SaaS – Software-as-a-Service, Annual Financial Report, Cloud-based system, Connectivity, Digitalization, Implementation, ESEF - European Single Electronic Format, Deloitte, Big Four environment, Workiva

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Acronyms

ASP: Application Service Provider

SaaS: Software as a Service SA

CRM: Customer Relationship Management

ESEF: European Single Electronic Format

SEC: Securities and Exchange Commission

CAGR: Compound Annual Growth Rate

APAC: Asia Pacific

UVP: Unique Value Proposiiton

AI: Artificial Intelligence

ML: Machine Learning

XBRL: eXtensible Business Reporting Language

1. Introduction

"It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most ***adaptable to change****."* ~ Charles Darwin (1809-1882)

For the past centuries, companies around the world have allocated a tremendous amount of manpower, money, energy, and other valuable resources to perform hard, manual and often repetitive processes in order to keep their operations going.

In most cases not even major technological breakthroughs or inventions could substitute humans in intellectual and manual tasks such as sales, computing, accounting and mostly reporting.

Today by the end of the very first quarter of the 21st century humanity has finally arrived at a revolutionary step in manual processes substitution, one that will possibly forever shape its destiny: **digitalization.**

Digitalization's major advantage is that it allows worldwide connectivity which in turn allows massive data processing and in the quickest way possible. More people accessing data means that more information is shared, which can by itself eliminate a lot of repetitive manual tasks that humans were performing for hundreds of years.

Companies' executives all over the world have thus realized that the future is turning digital, and if they want to be part of that future, they should implement digital cloud-based systems, and they should do it as soon as possible. Indeed, on one hand the regulatory environment of reporting constantly evolves towards more transparency (see European Single Electronic Format), a transparency that can only be achieved by using powerful engines, on the other hand, time-saving and reactiveness to market trends have become one of the most important assets of a company, which again only a well-connected digital interface can today deliver.

One can however easily recognize that the changing of well-established processes often used for decades can sometimes take up to several years and in a competitive environment this transition is a game against the clock that can in some cases even be lethal for a company.

Thankfully the well-connected world we live in today has also plenty of solutions and enabled companies to access a lot of different sources of efficient implementations. One of these solutions is for companies to ask the help of consulting firms in process optimisation and implementation.

While there have been much recent studies on the positive impact of adopting digitalized cloud-based business solutions including (Robert Jackson, 2021) exploring the business opportunities of Software-as a Service in the fintech sector and (Jorge Rodrigues et. al., 2021) citing a clear link between a firm's performance and its usage of SaaS platforms or also less

recently (Alkhater et. al., 2018) aiming to investigate the influencing factors in the decision to adopt cloud computing in the private sector, few research have taken the often-difficult implementation process of such tools into consideration.

This paper is focusing on this specific segment, namely the implementation of Software as a Service, one of the key access points to future technologies and to digitalization as a whole. More specifically the research aims to deliver clear guidance to the reader on how these sometimes-complex tools can be supplied to companies through the help and expertise of a market leader in consulting in Europe, Deloitte Belgium. The ultimate goal being to tackle the research question on **how a consulting firm can help small and big companies around the world in the implementation of digitalized software to switch traditionally manual processes towards more connected, cloud-based solutions.**

To achieve this first a global overview of Software-as a Service is introduced through the reviews of different literatures and articles wrote in the subject in order to better understand how digitalization entered the financial sector as well as the increasing importance of SaaS in the corporate world. The different available cloud-based platforms, their pricing models and the overall market size, market trends and key players are also pointed out.

Then in order to further develop the main research question a proactive approach is used by analysing a real-life implementation project in which a digital tool for a big industrial company's annual financial reporting is proposed to a client of Deloitte Belgium. The choice of the right platform to use, the detailed implementation process and Deloitte's unique value proposition helps understand why a company might need the expertise of a consulting firm in the implementation of such complex tools and the transition of its data.

In order to extract practical knowledge, an empirical research methodology is used to gather findings, key take-aways of the topic as well as a proposed solution for both the consulting and the client company.

Lastly, the future of cloud-based digitalization and reporting is also being analysed through empirical findings on other tools currently used within Deloitte Belgium.

2. History and importance of SaaS

2.1 What is Saas?

„Customers won't care about any particular technology unless it solves a particular problem in a superior way." ~ Peter Thiel, co-founder – PayPal

Few have possibly heard of the term Software-as-a-Service or SaaS, however, by the year 2022, it has become present in most of our organizations in some form or another.

In fact, centralizing various business applications is not a new phenomenon at all. Somewhere around the mid-1960s companies like IBM and other giants in the industry already tried to "internalize" as many processes as they could by offering database storage to institutions such as banks, government offices, or universities. With the 1990s and the mass adoption of the internet, centralized computing appeared. Mostly in order to reduce costs and increase efficiency Application Service Providers (ASP) were implemented in major organizations. These ASPs, which for some are considered the ancestor of modern life SaaS host software on their own servers and offer the rental of office applications. These different softwares and applications are rented by a company via the Internet or through a private line. The goal was to host and manage various business applications in one place and by centralizing ultimately increase the company's productivity (Brian Turner, 2020).

The idea of Software-as-a-service is a more developed extended and much more scalable version of old-school ASP processes. In many cases to access all the functionalities of a SaaS platform a simple web browser is enough for all stakeholders to input, read, migrate or

transform the data, all thanks to the cloud functionalities the software brings. In this way businesses no longer need a prior installation of an expensive software nor the usage of an extensive intranet environment. The acronym itself first appeared in the goods and services description of a USPTO trademark, filed on September 23, 1985 ("USPTO Service Mark". Alexandria, VA: USPTO.)

2.2 Example of SaaS platforms

Commonly SaaS software are used to improve process and content management, customer relationship management also known as CRM, human resource and on which this paper focuses on, **financial reporting.** (see Graph 1)

Nowadays the SaaS market is determined by many players from IT to collaboration tools, human resource management all the way to podcast hosting services. Market leaders like Adobe, Salesforce, Google Workspace apps or Microsoft 365 are well known by everyone working in the corporate world (see Graph 2). Salesforce for instance is the world's largest customer relationship management (CRM) platform, allowing companies worldwide to automate their databases and customer communications, as well as manage customer satisfaction and internal communication. Companies such as Toyota, the U.S Bank, Macy's Spotify, and even Amazon use Salesforce's software on a daily basis. In Graph 3 one can see the company's share price evolution over the past years.

Other new entrants such as Trello, Slack, Shopify, or Workiva are also shaking the industry by constantly enabling new sets of functionalities. In this paper, we are focusing on the latter company and the corporate implementation of Workiva as a reporting tool.

2.3 The Pricing model of Saas companies

While Saas has many different pricing models, it generally offers a subscription-based service where users pay a fixed monthly or annual fee for using the software. In this way customers

purely pay for what they are using, nothing more, nothing less, this is also called the pay-as-you-go model. In this way there is no big upfront investment for a company and even small start-ups can start to use the application. When a company grows and increases its usage of the platform, it becomes coherent to pay more for the application, as more functionalities become available. By using this pricing model, not only companies can save important sums of money, but cost allocations also become easier to manage, as each tool that is purchased within the application has a clear functionality and can be associated with different departments for example. One must, however, note as a major disadvantage of this pricing model the other side of the same coin, as companies need to fully rely on outside developers to provide the software, subscription fees can change by usage, from one month to the other it becomes difficult to predict costs and fluctuations on monthly bills should be expected. (source: *www.fortunebusinessinsights.com*)

2.4 Volume and growth of the SaaS market

The global SaaS market size was valued at USD 165.9 billion in 2021 and is anticipated to expand at a compound annual growth rate (CAGR) of 11.0% from 2022 to 2028 (see Graph 4.) Currently, with over 15.000 active market players the North American continent, more precisely the USA is dominating the market accounting for over 60% of the total revenues, (see Table 1) however as it is later stated in the paper, the global trends are rapidly moving towards developing countries of the APAC region, where the CAGR of the industry is expected to be much higher as digitalization becomes omnipresent and regulations on internet usage soften. In addition, increasing venture capital investments to adopt SaaS platforms are also promoting the Asian regional market. India and most importantly China is contributing to this huge growth (see Graph 5). Concerning the segmentation of the market, enterprise software dominated the market for SaaS and accounted for a revenue share of over 70.0% in 2021.

(source: www.grandviewresearch.com)

2.5 Why is SaaS important?

"The biggest opportunity for big companies has come by far in the digitization of internal processes." — Jack Welch

As mentioned previously, our world had become an unbelievably connected place mostly thanks to the wonders of globalization and digitalization. What no one disagrees on is that all sectors have seen some kind of benefit to digitalization, from global shipping, through agriculture all the way to education. Even complex manual tasks such as surgeries are now performed with some sort of digital tools. With this incredible success comes however many, sometimes not specifically mentioned challenges for traditional companies. In fact, it is by now well known that if a company is unable to adapt to the newest technologies or even to follow major global trends, it will be negatively impacted or even worse, phase bankruptcy. Nokia is the perfect example of a big corporation that failed to innovate and adopt new technologies. The Finnish mobile giant possessed more than 50% of the global market share of mobile phones in 2007, this market share has plummeted to just under 3% by 2013 (see Graph 6). Experts agree that this decline was mostly due to the inability to follow the smartphone boom of the early 2010s initiated by Apple's iPhone.

But this can also be extended for sectors that originally would not require technology as part of their innovation. One can take the example of the toy retail giant Toys "R" Us which simply disappeared due to the fact that it did not understand (in time) the importance of switching retail online and got eaten by other giants like Amazon or eBay.

Furthermore, the emergence of new entrants in the banking sector like neobanks and digital banking is also rapidly shaking the whole financial world. The list goes on, the single recurring factor for success is innovation through the complete adaptation of **digitalization**.

This same seek for innovation is thus well present by today in the corporate and financial world as well. As mentioned, banking became the first big segment in the sector that saw a rapid change in its traditional operating methods. Fintech giants like PayPal, TransferWise, or other neo banks such as N26 or Revolut appeared as early as the beginning of the 2010s. By using these connected platforms, corporations could not only save time but also for most cases money, as manual transactions were quickly eliminated. Rapidly corporations understood that not only their finances could be done the "digital way" but also, they could extend connectivity to their financial reporting, which was and in some cases is still considered as one of the most time-consuming and resource-demanding operations. One can note here that this turn towards digitalization came almost by necessity as in most occidental countries new reporting norms by now require some kind of digital data processing. As an example, one can take the European Single Electronic Format which is the new electronic reporting format in which issuers on EU-regulated markets need to prepare all their annual financial reports. This has by now become a mandatory legal step for European corporations since the 1st of January 2020. Recently the U.S. Securities and Exchange Commission (SEC) also adopted an amendment to digitalize the annual reporting of U.S based companies. The so-called 10k forms will from now on also require XBRL tagging, a structured data language that allows users to prepare a document that is both human and machine-readable (see Appendix 1).

As the reader can imagine, the benefits of implementing a SaaS solution for the above applications are many. Overall, the main advantages of using such softwares for a company are the following:

- Cost, with the usage of a subscription model rather than huge upfront payments for the installation of a hardware
- Improved business agility by automating manual processes and connecting inputs

- Resource allocation to reduce manual jobs by requiring less staff to make the same job
- Scalability by allowing future versions of the same software to have further compatibilities and impact

As a breakthrough, one can especially think here of a small or medium-sized corporation for which implementing SaaS is particularly a good option as it is the most cost-effective, less risky, and time-consuming alternative to have full access to a functional solution (Yeboah-Boateng et. al., 2014). The company does not need a strong infrastructure such as a cutting-edge expensive computer, an in-house server, or a specialized IT department that it would otherwise need to invest in. Using the power of the internet through the cloud to implement a SaaS solution is certainly not without hustle but it is still by far the quickest and most cost-efficient way for smaller companies to operate their finances or reporting processes. Another example can be a big corporation having stable revenues but being unable to develop in-house digitalized tools due to time constraints or simply being unable to catch the cloud wave. With all these advantages considered it had become today hardly imaginable to deliver complex reporting works without a connected and up-to-date SaaS platform. Therefore, more and more companies make the switch from their traditional reporting methods towards a cloud-based SaaS solution (Euripidis Loukis, 2019).

In the following section, in order to better understand why companies would require the help of an expert, a real-life implementation of a SaaS platform is analysed through the eyes of Deloitte, the consulting giant that is, thanks to its expertise, helping clients across the world in the implementation of modern services in the most efficient and quickest way possible.

3 A real-life example: Implementation of the Workiva platform by Deloitte

3.1 The Project and the client

As a real-life example of a successful SaaS implementation, one can observe a specific project at Deloitte Belgium, the market leader in the BENELUX area for cloud-based software implementation. As part of its multiple hundreds of yearly implementations this paper focuses on a specific project where Deloitte implemented Workiva, a SaaS tool specialized in cloud computing offering possibly the best connectivity and reporting features of any software on the market. The goal of the project was to update and most importantly to improve the annual reporting of a Greek conglomerate specialized in the manufacturing and selling of cement worldwide. In fact, the manufacturing giant, despite its size (EUR 1,7 B in revenues in 2020) had previously put little effort into the consistency and efficiency of its annual financial reporting. The company did not upgrade its reporting tools since the very beginning of the 2010s. The client was previously heavily relied on key individuals and manual data reconciliation which made it potentially vulnerable to emerging data management issues and thus sought to automate the elaboration of its annual and bi-annual financial reports through the implementation of a connected SaaS platform via the help of Deloitte.

During the first meetings with the client, right after that the project timeline and major milestones have been set, the current annual reporting process was presented to the Deloitte team (see Appendix 2). As expected, the client was using an obsolete version of Microsoft Excel, with heavy sheets that were taking several minutes to open and required a lot of manual work to operate. The upgrade of the client's financial reporting towards a cloud computing system was very much needed both for process improvement purposes as well as to comply with new European reporting norms. In fact, as explained previously the European Single Electronic Format became the standard of reporting for all European companies. After the very

first meeting, Workiva, Deloitte's partner cloud-based reporting software was proposed to the client, who accepted the offer. The transfer of data began. (Appendix 3).

3.2 Why Workiva?

"We simplify complex work" ~ Workiva's motto

Workiva is a global SaaS platform that provides to its users a cloud-based interface that allows connectivity and transparency of data via automation of traditionally challenging and manual tasks. By using data management throughout the reporting process, reusable templates, built-in collaboration tools, and most importantly consistency with global reporting requirements (Financial, Compliance, etc.), Workiva has rapidly become one of the key players in cloud-based reporting industry. The platform can be used for several purposes however the most common utilization is to provide companies audit-ready financial reporting, in the easiest and quickest way possible. The software brings together everything a company might need, teammates, datasets, data sources and much more. As the platform offers a 100% cloud computing interface, the data can be accessed from anywhere and anytime.

With in-house built functionalities such as Wdata, a cloud-based data repository used to access and collect massive datasets from across an organization via smart workflows the preparation of data for financial reporting, planning, and analysis has never been easier.

Connected data is also fully traceable and auditable, from the source system to the final report. As it is connected across the platform, data remains consistent across reports and presentations reducing the need for manual intervention and reducing risk.

The main benefits of Workiva are thus the reduction of manual processes in financial reporting, the increase of collaboration, and most importantly the massive time gains it allows by creating efficiencies by removing the need to use multiple Excel workbooks and by centralizing everything into one single source of truth.

The company has currently over 5000 active customers in 180 countries. As proof of success, one can note that 75% of Fortune 500 companies are currently using Workiva for their annual reporting. Such achievement clearly demonstrates the power of the platform.

Deloitte provides many services around Workiva including global statutory, regulatory, and financial reporting, just to name a few.

By using Workiva, organizations streamline processes and improve efficiencies. The platform is part of Deloitte's strategic Digital Controllership portfolio of offerings since 2013. Thanks to its multiple advantages versatilities, and many successful implementations around the world, the platform became an alliance partner of Deloitte around the globe in 2019 (see Appendix 4). From Workiva's side, nothing can express this partnership better than the fact that in 2021 Deloitte is named the Global Partner of the Year by Workiva Partner of the Year Awards.

3.3 Deloitte's Unique Value Proposition

As a global alliance partner of Workiva, Deloitte accompanied the company since its very beginnings. This allowed the consulting firm to growth together with the SaaS platform. The main value proposition of the consulting giant come from its core expertise in understanding finance, accounting, tax and reporting processes within the platform. Having a strong working relationship with Workiva and bringing extensive experience from across Deloitte's massive network is possibly its biggest UVP. One can add to this expertise a deep industry knowledge tailored to traditional reporting too, mostly coming from the global presence of Deloitte (more than 150 countries and territories).

Deloitte has also a demonstrated track record of delivering high-quality Workiva, and similar automation services to multinational companies in the past ten years. Quality, consistency, and experience have a central focus in the delivery model. The experience Deloitte has in designing and architecting solutions with Workiva and most importantly its understanding of leading practices in reporting help accelerate high-quality solutions that also give consideration to

client's longer-term objectives. Furthermore in opposition to some of its competitors, Deloitte also provides training to prepare the client to take the project forward, a global review with a guidebook and best practices is handled to the client at the end of the collaboration and post-project reviews also remain a solution in case of need.

Overall Deloitte's global team with local experts having industry-specific experience, allow the company to propose multiple solutions to each client on how to implement efficiently the Workiva platform. Today this investment provides Deloitte with the confidence to commit to the fastest start possible for clients.

3.4 The Implementation process: from scratch to operational

One must note that there are no clear generally accepted methods on how to implement a software, rather, each provider has their own precise way.

For Deloitte, the first step of the implementation starts with the explanation of the processes by making it clear for a business why they are implementing SaaS in the first place. The process should be justified by carrying out a cost-benefit analysis. The client needs then to decide if the direct benefits of implementing the SaaS software outcome the not negligible costs it comes with. Here one can take as costs the upfront subscription costs, the direct implementation costs, and also indirect costs coming from the allocation of resources to the project. If the benefits of implementing SaaS outweigh the various costs, the project can go forward. It is also at this step that the type of subscription is decided. In the analysed case the client chose to implement, as a first phase solely the Wdesk (basic package) and not Wdata functions of the Workiva platform for cost-saving purposes.

As a second step, a project manager should be assigned on the client side. This person should collaborate on a daily basis with Deloitte's team. If possible, the client assigns an employee with technical background, this not only speeds up the process but also enables smoother training for later stages. One must note here that anyone with basic informatic skills can be

assigned as a project leader, there is no special need for an IT specialist. Next to a project manager, it is highly recommended to have other employees helping in the implementation, this varying both on the size of the client and the project. The employees are invited to take a free online e-learning course of 4 hours to get familiarized with the platform.

The third step is probably the most time-consuming, as it is directly related to the migration of data. Thankfully Workiva allows the importation of outside files such as Microsoft Word, Excel, and even PDFs. In this way, data migration is more about adjusting formatting and content rather than trully recreating the data itself. A precise implementation roadmap that follows clear design, formatting, and content requirements needs to be followed both by Deloitte and the client, however. This usually takes between 3 and 4 weeks to be completed. This step is also a nice opportunity for the client to reconsider, harmonize, and simplify their current state practices to take time out of the process.

For Deloitte successful implementation is not only about the technical configuration of the tool but also about the proper roll-forward and training of local teams, for this, weekly meeting are held to help provide current best practices and answer potential questions on the tool. This step is probably one of the most important ones as it not only maximizes the added value brought by the team but also creates a strong relationship between Deloitte and the client which is crucial for future collaboration and client loyalty.

3.5 Project completion and feedbacks

In this specific case overall, the implementation steps consisted in:

- Migration of the annual reports (consolidated, individual, and subsidiary companies) from the previously used Excel file to Workiva's platform. This covered important metrics such as Consolidated Income Statement, Cash Flows, Taxes, Inventories etc.

- Linking the cells with predefined formulas to the reports to set up the automation across the reporting processes
- Generating the XBRL tagging of the financial statements following ESEF standards to fully comply with local and European legislation
- Training sessions for final users with the presentation of a personalised user's guide for the client
- Global support during the roll-forward process
- Review of the project, sharing of best practices and key take-aways

As seen above Deloitte has been using both its collaborative approach, as well as its partnership with Workiva, to always ensures successful adoption of the novel platform for the client. The consulting firm is always working together with the client to deliver the implementation activities, all while leveraging leading practices and extensive Workiva experience gained across a number of global and local deployments. Lastly, Deloitte's goal is a complete transfer of knowledge such that the client can use and maintain the environment after the implementation project.

Through its experience of implementing Workiva at other clients, it believes to be positioned strongly to deliver a successful project outcome for the client.

3.6 Results

The project's impact has been measured quantitatively and qualitatively which includes improvement in process efficiency, reduced cost, and increased data accuracy as well as a collaborative workspace, enabling different teams to work on the same spreadsheet. To quantify this change one can take the example of the clear cost reduction for the company. Indeed, after the implementation the client allocates only two FTE (Full-time equivalent) to its annual reporting, in contrast with previous year when due to the overall slower processes and further

reporting requirements coming from the XBRL taggings at least 4 FTE were mobilized. On average one FTE costs between 20 and 25k EUR a year to the company, excluding social security and other bonuses. Taking this average and the time working on reporting (at least 3 months per year), one can easily calculate that the direct costs reduction directly allocated to reporting is at least somewhere between 10 and 12,5k EUR per year. One can note that this amount solely reflects the monetary gains and does not consider the opportunity costs that employees productivity on other projects/tasks can also bring to the company. Taking the above numbers, the life-long subscription and implementations fees are completely offset in just 2,5 years. Realistically the client will use the platform for a period of 10 years.

Another control point of the success of implementing Workiva is the data precision. On the demand of the client, the same sanity checks for data accuracy have been implemented in Workiva as the ones used previously within Excel. After the first week of usage the health checks on data consistency only found 7 potential of errors, mostly in incoherent formula usage. In contrast the previously used health checks were as per the client explanation retrieving at least 40 different errors per reporting cycle. The more than 500% precision gain in data accuracy principally comes from the fact that in Workiva only a single source of truth is used, minimizing entry errors as well as the platforms intelligent way of correcting formulas when needed.

Further improvements are expected as the project is in its early completion phase, however the client already expressed its satisfaction and overall rated the implementation and most essentially the follow-up process to be highly successful, up to its expectation and express that it would work again with Deloitte for future developments. Indeed, the client has expressed its strong interest in also implementing Wdata, the more powerful version of the software somewhere around Q3 2023, thus continuing its relationship with the consulting firm for years to come. (Source: Deloitte Internal)

4 The future of cloud-based reporting, a proposed solution for Deloitte and the client

"The future of SaaS will be defined by doing more with less. Today, technology is proactive but tomorrow technology will be predictive. Interestingly, 90% of all data has been generated in the past two years. I like to think about artificial intelligence and machine learning, not as a product, but as electricity that will power future tech."

- Chris Makkreel, Head of Technology, Salesforce

As companies have realized by now that the implementation of technology reduces or even eliminates redundant manual tasks and that most of the internal processes could be improved it is easy to expect that the future of SaaS is full of premises. As the demand for cloud computing increases continuously around the world and as technology continues to evolve rapidly, so will SaaS platforms. Indeed, according to Bloomberg, public cloud platforms, business services, and applications (SaaS) will all grow at a 9% CAGR (Compound Annual Growth Rate) between 2020 and 2023, and worth over $60 billion.

When it comes to the possible evolution scenarios of the system, the three following attention points can be raised about future trends. One should note that multiple other evolution criteria might exist:

- The use of Artificial Intelligence
- The use of Machine Learning
- The concept of Vertical SaaS

4.1 The use of Artificial Intelligence

When it comes to innovation, one of the key attention points that come back the most frequently nowadays is the implementation of Artificial Intelligence or AI. The term refers to the simulation of human intelligence processes by machines, including computer systems.

The concept of AI has rapidly become an integral part of our society, and this is not different when it comes to SaaS. Artificial Intelligence technology is quickly becoming a standard in the SaaS industry of the future. For many researchers, AI is the ultimate game changer, the one that can bring SaaS to a brand-new level as it does not only allow a quicker learning path through complex pattern recognition systems but also enable users to connect multiple sources of data at once thus giving much more power to the software. SaaS combined with AI could produce impressive automation and data collection capabilities all by improving responsiveness, security and helping to build a more user-friendly interface overall.

4.2 The use of Machine Learning

By using Machine Learning (ML) capabilities SaaS could automate many manual functionalities that only humans were able to perform until now. One famous example of machine learning is the phenomenon of live chatbots, which can (if deployed correctly) completely automate the customer service process and human intervention becomes limited or even eliminated. Machine Learning with its self-learning capabilities is easily the fastest-growing segment of SaaS software and is rapidly becoming an integral part of the model. One of these capabilities could be the usage of blockchain and decentralized databases to improve transparency and data security for the user by not holding all their personal data on traditional servers. One must note here that current ML implementations are still in their infancy but have already proven to be highly successful meaning that much stronger capabilities are still yet to come.

4.3 The concept of Vertical SaaS

The third possible evolution of the SaaS system is the implementation of so-called Vertical SaaS platforms. Their apparition in the late 2010s has already started to shape the

industry. In this case, the proposed technology is not necessarily revolutionary nor game-changing but rather, verticality refers to a brand-new selling proposition to SaaS. Indeed, unlike Horizontal SaaS which aims for broad, global customers in a large variety of sectors, Vertical SaaS is much more client based, thus targets smaller audiences or niche industries. Software providers often develop and adapt features according to the demand of their clients.

By targeting specific clients or even just parts of the supply chain, the SaaS software becomes also much more customizable, and flexible, and often solves a lot of industry-specific issues. Since the technology proposed is unique to the niche industry the number of potential clients is much smaller, but one can note that the emergence of competitors is also less likely. An example of Vertical SaaS could be software that allows connecting third-party automobile part resellers to clients or dentists to patients.

Last but not least, as per a report published by the World Advertising Research Center (WARC), by the year 2025 more than 70% of the world's population will browse the internet through their smartphone. It is clear that SaaS will thus be optimized for mobile usage, compared to mostly computer usage today. Major players of the industry have indeed already started to propose all their software functionalities within mobile applications. One can note as example Workiva's Wdesk mobile application, or Salesforce new mobile interface (source: www.fylehq.com).

4.4 A proposed solution for Deloitte and the client

Considering these adoption points Deloitte has to decide today in which direction to go and which decisions to make and what strategy to adopt in order to remain the market leader in the providing of SaaS solutions to clients around the world.

For starters, while keeping all its comparative advantages in the implementation of third-party software, the consulting giant is slowly switching from these external SaaS systems to more related-party or even in-house-built software.

One example of a successful related party software usage would be the massive implementation of Anaplan a business planning software in 2021 after a strategic alliance between the two companies. This alliance offers cutting-edge technology for connecting budgeting, forecasting, and business planning purposes. The software also has the ability to deliver end-to-end processes for a lot of financial-related topics such as sales, human resources, or supply chain. The alliance was a success since the first day, as competitors could not offer such a state-of-the-art solution to clients, especially not at a reduces price. The solution has been successfully implemented in multiple banks, retailers, and corporations worldwide. As another example, the Atom™ software can be cited. The fully in-house built software enables organizations to entirely manage financial data by enabling the architecture of complex financial data models through iterative, enterprise-led design cycles supported by proprietary digital assets. The tool is also widely implemented throughout financial reconciliation projects.

Overall, the consulting firm manages to keep its market-leading position in the implementation and provision of SaaS software with three major approaches.

1. Understanding various and always-changing client needs and trends
2. Staying up to date with current trends by actively collaborating with third-party service providers
3. Investing in R&D to develop in-house tools

As a direct result of this approach, when it comes to reporting tools, Deloitte can enjoy the close collaboration and premium partnership with the Workiva platform for still many projects to come.

On the other hand, the client can also enjoy a long-term solution to its previous time-constraint problems in its annual reporting. As a direct beneficial impact one can note the fact that just a handful of people can now create, design, and maintain the entire reporting of a company of such size. Resource allocation and cost-saving goals were clearly achieved with the implementation of an audit-ready, ESEF-compatible reporting tool. It is now up to the client to properly educate their teams on how to use the engine for reporting purposes at the first time and many other purposes if wished. Indeed, as mentioned previously the client expressed interest in further developing its digitalization by adopting Wdata in the near future. This thrive to always innovate and follow global trends will put the client company in a favourable position compared to its competitors, as its future is much more secure this way, as seen earlier. Moreover, its newly built relationship with Deloitte will always allow the company to quickly ask for help in case further applications are needed.

5. Conclusion and key takeaways

This paper proposes a comprehensive framework for the business implementation of SaaS solutions. One can conclude that the never-ending need for connectivity coming from the mass adoption of mobile data, chatting, video conferences, and the usage of smart devices has encouraged the demand for cloud-based solutions, which consequently contributed to the implementation of SaaS platforms.

As seen in the proposed articles and sources above, the major advantage of such a platform is that its user no longer needs to physically meet in order to work together, as these applications can be accessed from everywhere as far as an internet connection is provided. Furthermore, a global trend and the need for businesses to outsource major activities further fuels the apparition of SaaS platforms. A well-designed SaaS implementation opens the door to process improvement, cost savings, transparency in communications, compliance to local regulations

and an enterprise culture open to change. Moreover, Software as a Service removes the need for maintenance and repair. Cloud services provide backup options, and any service outage has minimal impact because service providers have more staff than most businesses do, so they can quickly resolve issues. Data retrieval and backup are supported in local data centers. In addition, updates are managed by service providers, ensuring that the software is always the current one.

The Global Pandemic has also, in its way positively impacted the industry, as business leaders around the world, as well as government offices, learned the hard way how to work remotely and understand better by now the advantages of connectivity. Furthermore, the personal usage of cloud-based systems such as online streaming platforms also sets the global mindset of people around the world to be non-stop connected while being physically separate.

As per the geographical division of SaaS, the APAC region is expected to have the biggest CAGR from 2022 to 2030. Mostly propelled by China and India's booming economy and increasing number of secured servers, the region will account for over 30% of the market share by the end of the 2020s. North America is believed to hold its market leader position with a major market share of around 50% for the same period. Most of the biggest players in the industry are still located in the US and with their expected boom, the region will remain stable. Innovations in mobile connectivity such as the mass adoption of 5G and always increasing usage of smartphones should further increase the demand for SaaS platforms. Having well-established market players such as Microsoft, Salesforce, IBM, Google, and others is one of the drivers of market growth. New entrants such as Trello, Wrike, Workiva or Slack will also continue to shake the industry by always providing new set of functionalities.

All these things considered it is easy to understand why over the past few years, an increasing number of companies have adopted Software as a Service to provide better services and stay ahead of the competition. Yet this eager to follow technology do not come without its own challenges. As a highly competitive industry, major players are always inventing new

functionalities to hope to target new customers in new regions and increase market share, thus revenues. The difficulties to follow latest functionalities together with the already challenging process coming from the implementation of these functionalities can be overcame for instance by assigning experts from consulting firms to manage the migration of data and the formation of local teams.

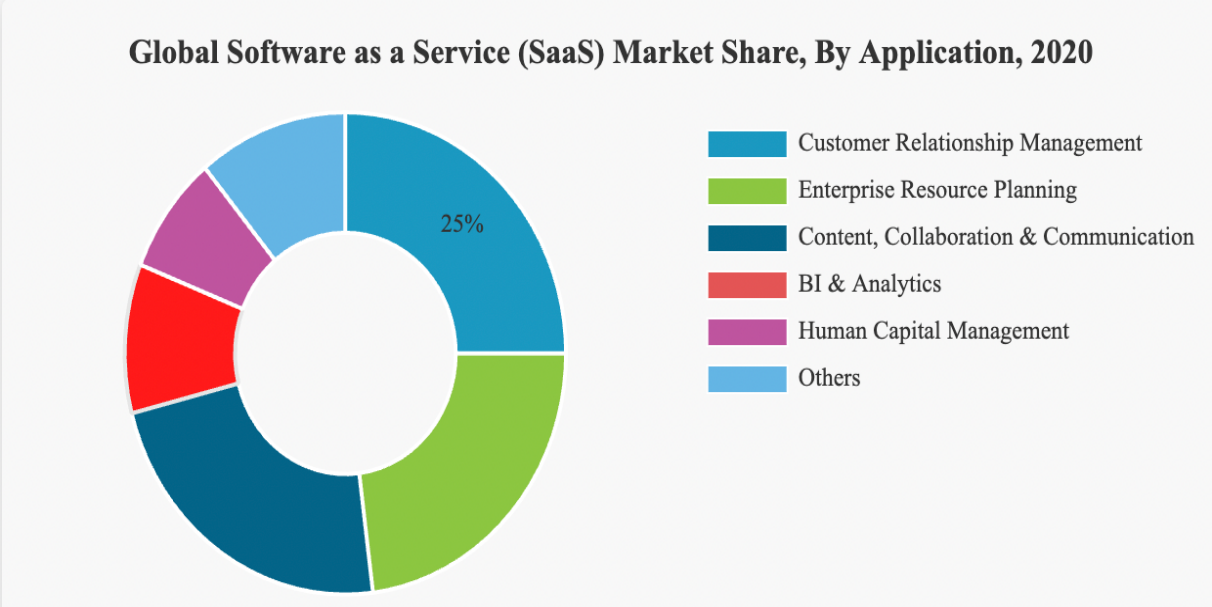
Indeed, as the real-life application of such complex tools are not within the capacity of some enterprises, the global expertise of consulting companies such as Deloitte can allow smoother data transition, implementation, and follow-up for these companies that very much require help in the pragmatic adaptation. By allowing pre-defined but also highly customizable cloud-based software solutions, consulting firms can deliver quick results in a matter of weeks regardless of the profile of their clients, compared to much longer implementation times for in-house solutions. **The considerable gain of time and resources for the client companies as seen in the empirical research in this paper remains the number one reason why companies around the world which are open to change their traditionally manual processes are contacting consulting companies around the world for their software implementations.**

Overall, as complexity stays the enemy of all companies, and as SaaS tools will remain an important if not an essential part of any organization, the demand for cloud-based computing is expected to continue to increase.

As Steve Jobs once said: *"Innovation is the ability to see change as an opportunity - not a threat.*

The world will constantly need both adaptation, and innovation, thus one can conclude that SaaS service providers such as Deloitte and other consulting and cloud-solution offering firms are today better positioned than ever before to remain the major source of answers for most of the world's companies' challenges.

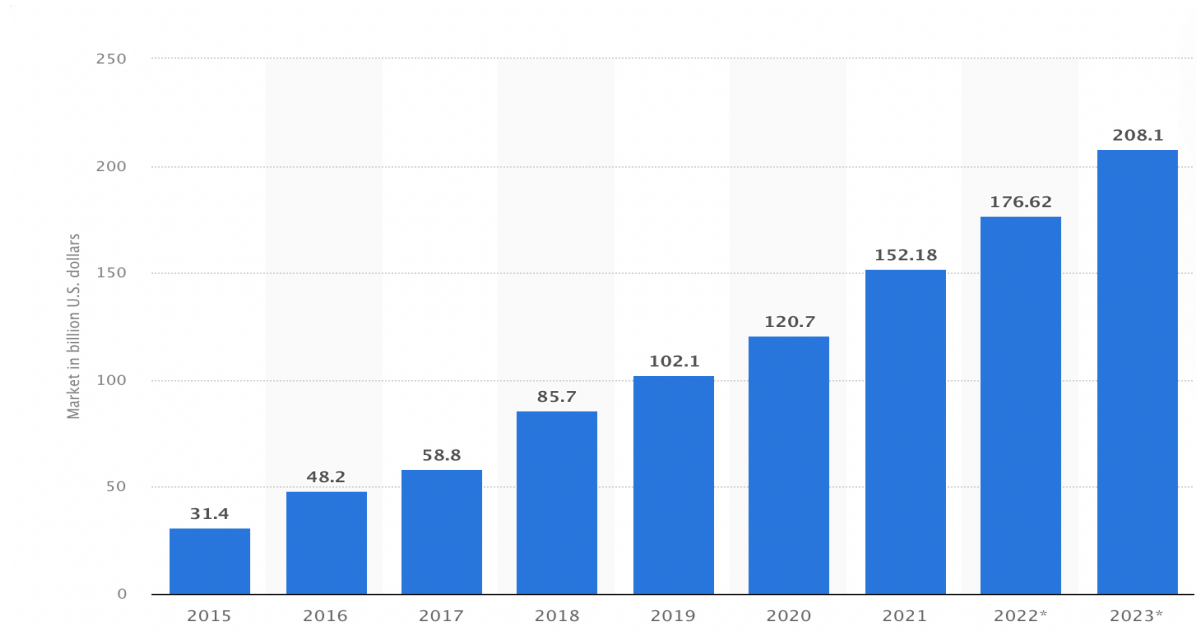
6. Appendices



Graph 1: SaaS Market Share by Application, 2020
Source: www.digitaljournal.com

Graph 2: The biggest SaaS Companies by Market Cap (2020)
Source: Open View Report

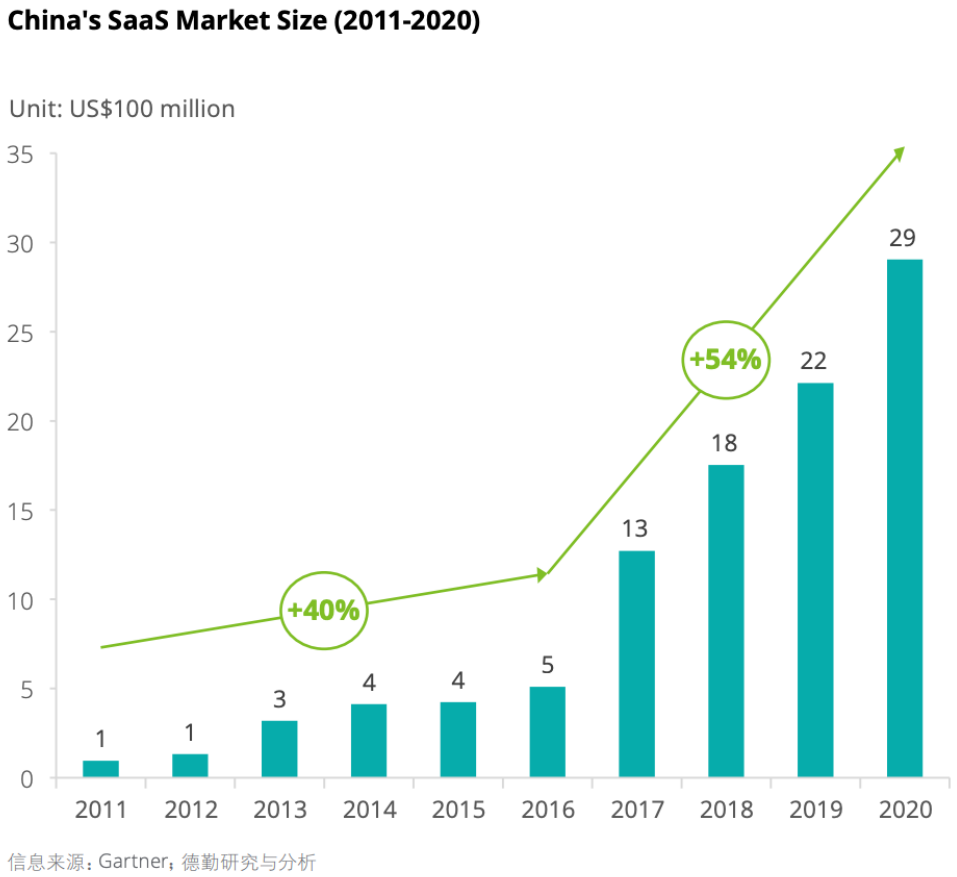
Graph 3: Salesforce share price from 2016 to 2022
Source: Bloomberg



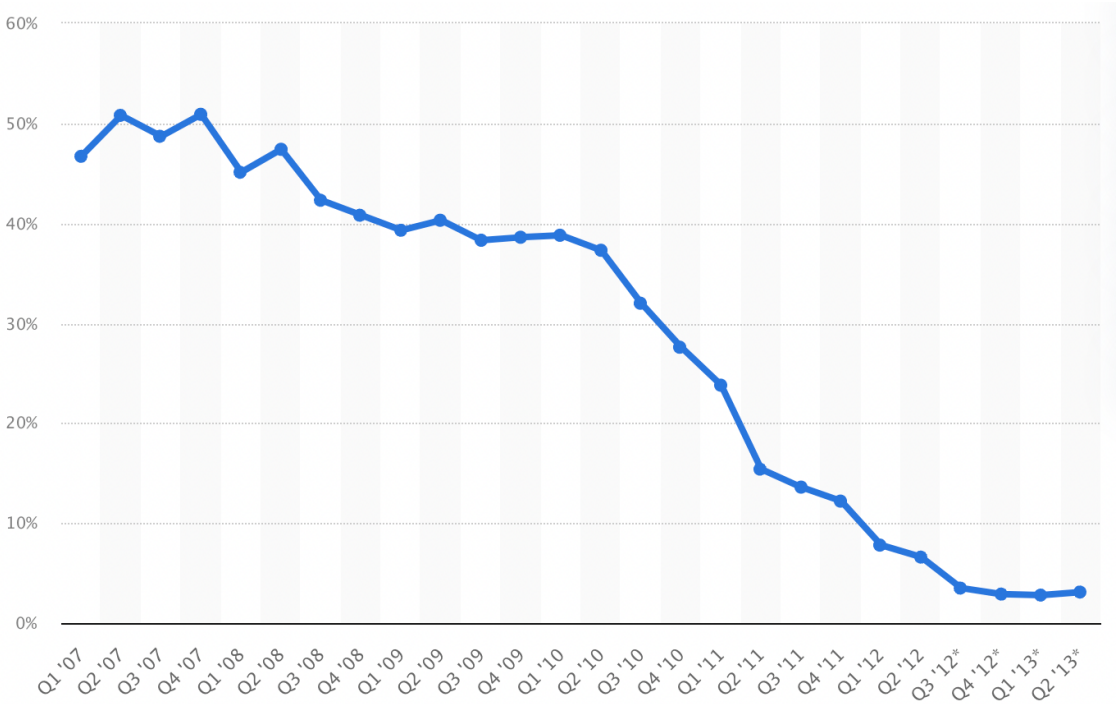
Graph 4: Total size of the public cloud software as a service (SaaS) market from 2015 to 2023 (in billion U.S. dollars)
Source: Statista.com

Rank	Region	SaaS Companies*	Approximate Market Share
#1	North America	19,000	67%
#2	Europe	5,469	19%
#3	Asia	2,500	9%
#4	South America	662	2%
#5	Oceania	635	2%

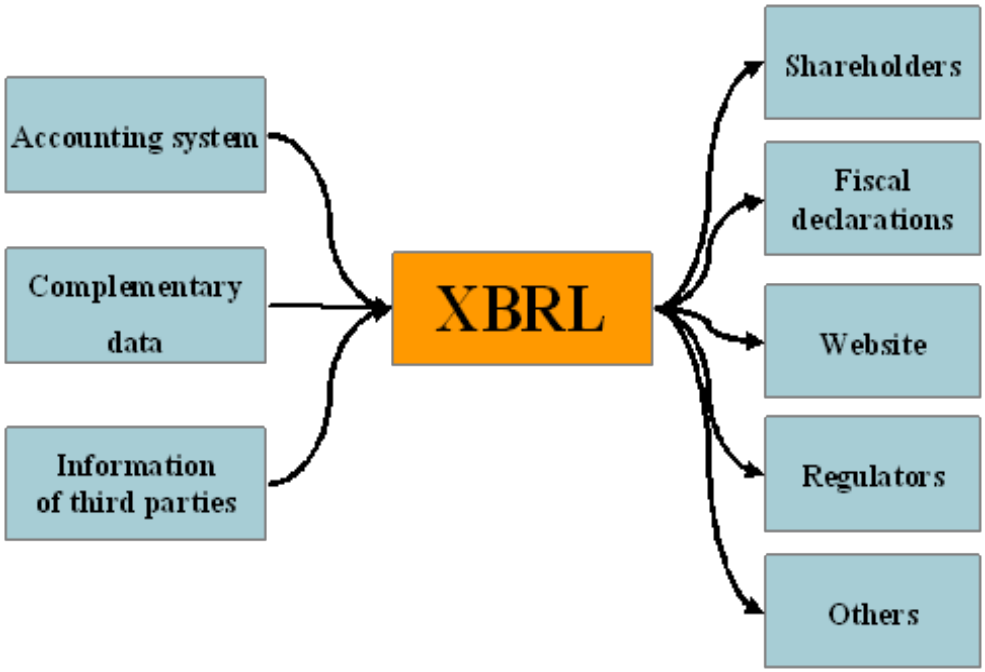
Table 1: Number of Global SaaS companies by country
Source: www.explodingtopics.com



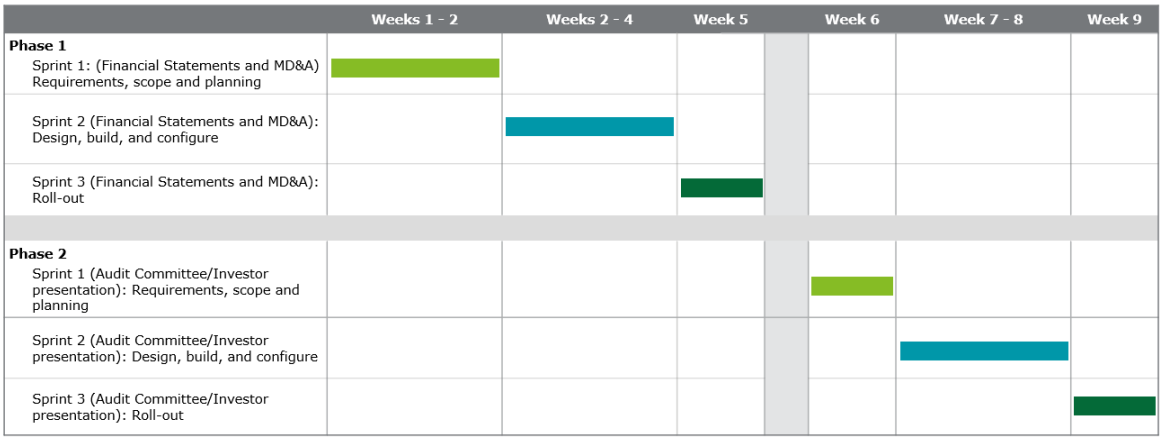
Graph 5: China's SaaS Market Size between 2011 and 2020 (in million USD)
Source: Deloitte & Gartner



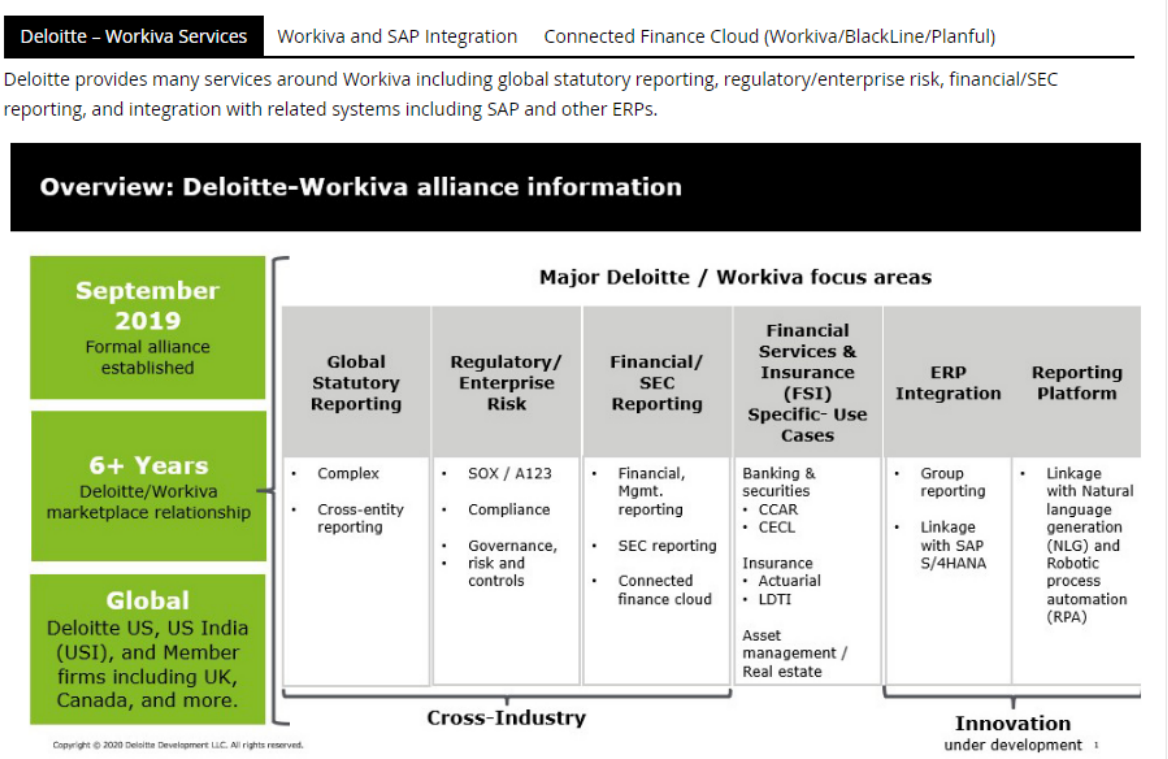
Graph 6: Global market share held by Nokia smartphones from 1st quarter 2007 to 2nd quarter 2013 Source: statista.com



Appendix 1: What is XBRL?
Source: www.xbrl.org



Appendix 2: The project's timeline
Source: Deloitte internal



Appendix 3: Deloitte's alliance with Workiva
Source: Deloitte internal

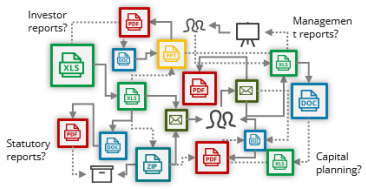
Deloitte.

Enhance your reporting process with Workiva

Simplifying the way you deal with the reporting process, with improved accuracy and efficiency

Leverage on the capabilities of Workiva, as a platform to deal with reporting inefficiencies and challenges.

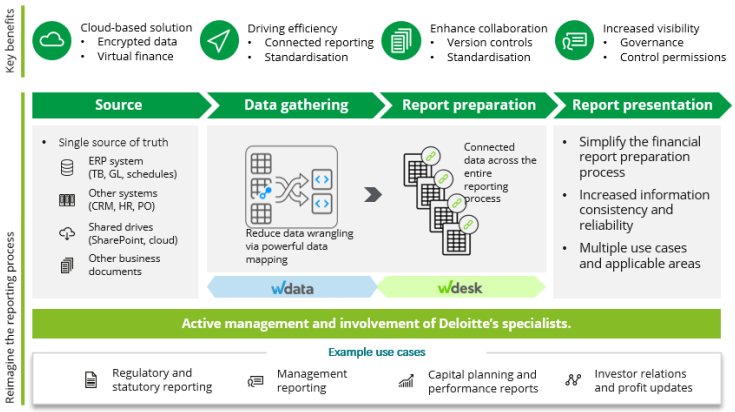
Current potential woes – Data wrangling and manual processes



Teams involved in preparation of financial information for multiple entities within the group, and might be potentially faced with the following set of challenges:

- Highly manual processes and time consumption
- Lack of governance and visibility of information
- Complex financial reporting preparation process

Enabled with Workiva – The connected reporting solution



Our Approach

We will assist you with scoping and planning through to rollout. The approach below illustrates the key activities to implement Workiva.

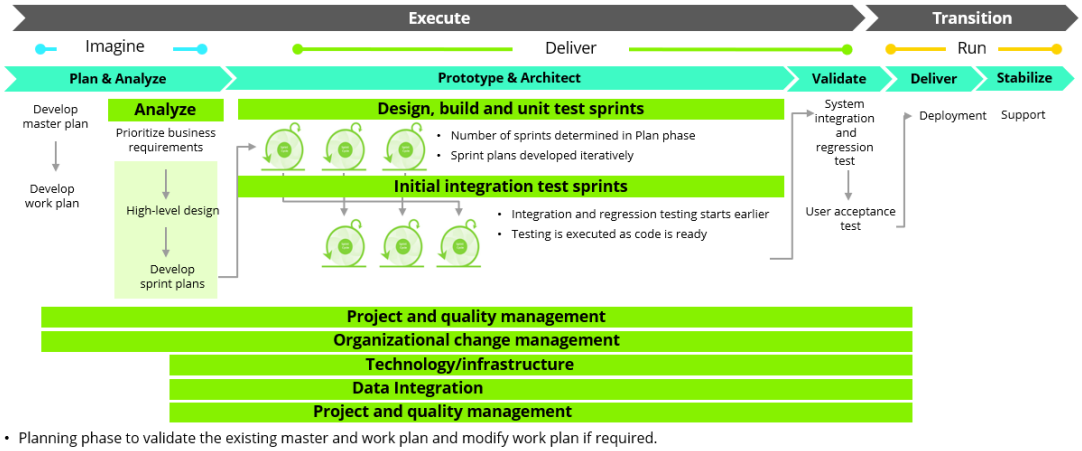
Phase1 – External Financial Statements and MD&A

Sprint 1: Review	Sprint 2: Design and Configure		Sprint 3: Roll-Out
Scope & Plan	**Environment Design**	**Environment Configuration**	**UAT, Training & Roll-Out**
Meet with project champions to assess Company's current environment to determine how best to approach the Workiva implementation together. Validate findings from review with key stakeholders to ensure our understanding and prepare an implementation timeline.	Gather all workbooks & documentation which will be recreated in the Workiva environment. Validate assumptions and design with key stakeholders. Design the infrastructure for the Workiva implementation, including projects, folders, tasks, certification processes (if required), employee-level roles and permissions, etc.	Setup workspace, folder, and file structure to support business requirements identified to support reporting packages. Generate the fully-linked financial statements to the appropriate sections of the financial statements workbook. Develop structure for user security, roles, and permissions.	Development of tailored Workiva end-user training material to support the implementation and go live of the software as required. Delivery of training to Workiva users as required.

Prior Workiva Projects

Value realized by our clients

Client	Implementation	Challenges	Business Impact
Construction Company	• Financial consolidation model • Multiple sets for financial reports	• High Volume of financial statements • Version control issues	• Master note template for every set of financials and to links resulting in zero manual notes in each subset • Robust consolidation workbook and key inputs rolling forward • Optimized the financial statement close process



- Planning phase to validate the existing master and work plan and modify work plan if required.

Appendix 4: Extracts of Deloitte's proposal to the client
Source: Deloitte Internal

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