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# A New Digital Approach to Strategic Activities:

## Technologies and Tools Available With the Consulting Support

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### ABSTRACT

As automation increasingly influences businesses, digitalization technologies and tools such as artificial intelligence, machine learning, etc., become essential to support the definition and implementation of strategy activities aimed at improving businesses' competitiveness in the digital, cloud-based, and data-driven world. Since this business growth corresponds to an enormous increase in the data volumes, it is fundamental for businesses to adopt several digital solutions in their strategy process together with a tailored digital strategy embedded in their strategic plan. The purpose of this article is to critically analyse the classic strategy activities' latest trends/needs and how they could be properly addressed by the available digital technologies. Finally, for every activity are mentioned some best practices tools and software, supported by management consultants, since they trigger a high return on investment in term of the time savings, less dedicated resources, and final business performance.

### KEYWORDS

Commerce, ICT, Leadership, Strategy

### INTRODUCTION

In this new digital economy, the interconnection of an increasing number of people, activities and "things" is radically changing the existing business models. In this scenario many opportunities are emerging and an increasing number of businesses want to take advantage of them by becoming more "intelligent and digital."

The digital business is based on innovative IT infrastructures whose pillars are represented by the mobile, Cloud, Big Data, and analytics technologies. This transformation is accelerated by the Internet of Things, the evolutions in machine learning and innovations such as blockchain.

The disruptive technologies and tools give the opportunity to radically transform the business models and create new products and services. The classic strategy activities (strategic plan, design of business, business planning, models, business valuations, M&A) are the first one to strongly benefit from the mentioned technologies & tools, as confirmed by the high return on these digital investments.

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## STRATEGIC PLAN

The increasing need of having a strategic planning cycle completed in shorter time (from 12 to 24 months) is strictly linked to the different speed of business (e.g. high innovative products with a shorter life cycle or fast evolution of digital tools). Action plans map what needs to be immediately executed together with the investments and resources required (e.g. in the next months). This rolling action planning is shorter and includes realistic plans able to respond quickly to the new business trends (Desai, 2016).

In term of contents, the traditional analysis of markets, competitors (e.g. market shares, swot analysis etc.), regulations (impacting on sales opportunities and new markets) is now always integrated with the analysis of current and emerging digital technologies, of their impact on the company in the next months. In this new context the strategic planning team, traditionally used to collect and analyze a huge amount of data (prior to giving their recommendations), now acts as a project manager and operator in the field of the immense opportunity offered by digital transformation. For example, the customers analysis included in the strategic plan usually considers the main clients representing the higher percentage of company turnover; with the implementation of solutions supported by cloud technology, mobile business models and data analytics is possible to track also the small underserved segments of clients, analyzing their trends and needs, since these segments could be important for the business in the next future.

Cloud technologies (software, storage, networking, virtual machinery and applications) are now available on the internet (through SaaS platforms) also to SMEs, allowing them to operate in a more efficient way. Thanks to the support of this technology many opportunities can be achieved in term of efficiency with the enhancement of communication and collaboration (all the players can access simultaneously to data and give their contribution). Every department/level involved in the elaboration of the Strategic Plan can equally contribute and work for the same goals, by accessing a common cloud platform (in this way inefficiencies and discrepancies are avoided).

Interoperability allows systems to move to the cloud and be more compatible with other systems (e.g. data analytics and enterprise mobility are usually part of the cloud package). Flexibility and productivity are boosted by the possibility to work on data everywhere; the real-time nature of cloud software keeps updated staff and business on the latest developments in the strategic plan process. Risks can be quickly identified and promptly communicated to the organization. Some applications offer specific functions able to improve the visibility on the Strategic Plan process through dashboards showing the status/progress: this function allows the organization to address any issue in time. Since the resources are provided by the hosting service, businesses can scale up or down based on their operations and storage requirements. At this purpose, the cloud-based software can be adapted in size and scope to the evolving needs of the organization (in term of growth or change of goals). Data security is enhanced since business data are safe, recoverable and backed up. With the model "pay as you go" it's possible to reduce the costs of equipment & systems, maintenance and IT upgrades, consulting fees, energy consumption and any issue is solved more quickly. Finally, agility allows companies to access the latest business strategies since cloud technology offers a platform for rapid development, distribution, deployment and experimentation of new technologies.

In this context, the support of consultants it's necessary for structuring a cloud strategy able to facilitate a smooth transition. Before the start of the strategic planning process, it is important for consultants to understand the client company's IT requirement (databases, applications, interfaces, extensions, networks and customized hardware) (Stegaroiu, 2018). Second, consultants can help in evaluating the opportunities, risks and challenges of adopting the cloud technology, assessing the feasibility of deploying in the cloud the current business applications. The last step is the adoption of the right cloud strategy by researching the right cloud service provider able to maximize the return on investment (ROI) of the business.

Big Data represents an important innovation of artificial intelligence with serious impact as a strategic planning tool since it relies on a huge amount of information from all the company departments, from customers and from society. All this data is fundamental to build viable and efficient scenarios.

Big data integrated with AI is a powerful tool for data analysis since it generates, interprets data and presents results; strategic planning departments are strongly supported in this by software development/data engineers provided by consulting companies. The level of success is measured by the capacity to transform the Big Data in viable scenarios, in a logic of data flow system; the quick collection and analysis are aimed at building quality data for strategy departments. A good data flow system is supported by a good Big Data system and agile methodologies to keep the flow always efficient (Orsini, 1986).

As anticipated, the digital strategy is now automatically embedded in the strategy plan, and the role of consultants is to drive clients in accepting the importance of using Big Data and data analytics combined with the implementation of digital technologies (Chen et al., 2014).

The disrupting positive impact of implementing AI and machine learning solutions are always advised by strategy consultants, daily supported by their Data Engineers (able to organize the data flow and design the proper structure), data scientists (analysing the information collected), software engineers (creating tools for the use and distribution of the information) and data curators (able to understand the data and technologies for its collection and use), working in strict contact with the chief digital officer.

Emerging tech radar (graph analytics and NLP) and semantic analysis are interesting technologies useful in the elaboration of Strategic Plans.

Graph analytics is an area of analytics workload represented by tools used to determine strength and direction of relationships between objects in a graph. In particular, graph analytics algorithms help to complete specific kinds of analysis as path analysis, connectivity analysis, community analysis (on groups of interacting people in a social network) and centrality analysis (on most influential people in a social network or on highly accessed web pages) (Ferguson, 2016).

Natural language processing (NLP) is one of the most important branches of AI with the purpose to develop algorithms able to analyze, represent and therefore understand natural language (written or spoken). The computerization of business processes and digitalization of documents contributed to a continuous and exponential increase of data, mostly textual, produced and held by public administrations, hospitals, banks, law firms, private companies (Leopold et al., 2013). In this context (characterized by an extreme variety and quantity of content expressed in natural language) the use of artificial intelligence has a strategic importance, and the strategy consultant encourages the creation of innovative solutions for processing, understanding and producing textual data automatically (Chu-Carrol et al., 2017). The integration of NLP with deep learning algorithms, produces extraordinary results in different application scenarios like translation of texts or speeches between different languages automatically, extraction of relevant insights (with both informative and predictive value) and generation (from huge amounts of textual data) of content in natural language (summary of key opinions on products/services/individuals included in documents or texts).

Semantic analysis helps companies to exploit, organize, examine, structure and finally use Big Data. Consultants can offer these solutions and give their clients important quantitative (time savings) and qualitative advantages (data organization). In business, it's possible to rely on two types of data: structured (coming from organized sources, such as a client database) and unstructured (e.g. opinions or reactions from social media that are time-consuming to collect and, on a larger scale, don't bring much value) (Thebault, 2017). Big Data is characterized by "Three V's" (volume, variety, and velocity), but a proper data exploitation requires two additional V's (veracity and value) in checking the accuracy and data sources. Semantic analysis can provide the "4$^{th}$ V" (value) since it's the link between computer and human processing (it qualifies texts or voices out of a large set of different elements, selecting only the most relevant for the analysis and displaying them properly) (Casati &

Shan, 2002). Consultants can help in implementing models integrated into semantic analysis. While the IT system hosts the semantic analysis tool, API's scatters the lexicon throughout the whole of the IT system. The applications of semantic analysis are particularly useful in the fields of strategy plan elaboration. For example, it is possible to elaborate strategies to improve customers and employees' experience since the combination of semantic analysis and AI mechanisms allow to fully unravel customers' behaviours. In addition to text and voice, semantic analysis can also interpret customers' feelings and helping CS in prioritizing information (offering a quick customized experience) or isolate unhappy customers. This allows companies to elaborate proper strategies as a better response to customers' needs. Also, HR strategy can benefit from semantic analysis: for example, with the support of grammatical modelling it's possible to recognize skills and expertise (e.g. in cv shortlisting) and cross-reference them with information already online (to validate the analysis results).

Bright Idea is a tool/software commonly used by consultants in the elaboration of clients' strategic plan. Bright Idea Innovation Cloud 2.0 (BIC 2.0) includes some programs for innovation allowing the participation of employees to the strategic planning processes (via web portal, mobile app, email, etc.) and tracking the progress (together with the ROI calculation of any process improvement) (Heck, 2005). Employees can participate in the strategy plan elaboration with discussions on company values, targets, processes, projects. It is possible to explore new market opportunities (through crowdsourcing initiatives and ranking ideas on process improvements), bypassing barriers, creating ecosystems, catching new business proposals, finding funds and calculating projects' business/financial impact. The project evaluation function is able to track trends on the most appealing projects, to estimate how to use an emergent technology (for processes improvement or new product launch), to investigate on clients' needs (with specific researches or engaging audiences) or to incubate several projects (by setting timelines and tracking the progress).

The program is also able to evaluate ecosystems by promoting and developing partnerships (focused on new technologies and trends); through accelerator programs is possible to improve collaborations by tracking strategic technology providers or financing ventures, together with monitoring the project progress and the financial impacts and ROI (Brightidea, 2019). In the elaboration of HR Strategy, consultants use Bright Idea transformation software to help clients in building flexible organizations focused on new business models and company innovative culture; in this way, the transformation process (products, services, operations and processes) is managed centrally. Finally, this software allows (through gig economy platforms) to match short term job requirement with profiles in the market, to create internal consulting teams (the crowdsourcing ideas in promising projects are routed to the right decision maker) and to set websites for research and selection of new digital opportunities.

## DESIGN OF BUSINESS MODELS

One of the main strategy activities where consultants' skills are often required is the elaboration of clients' business model; it passes through the definition of target customers, their value proposition and the value chain architecture. Digital transformation gave companies the flexibility to redesign their value chain architecture and this is also the occasion to create new value propositions and look for new customer targets.

The redefinition of supply chain can result in changing some activities position (e.g. production of specific works in progress or new inventory position based on shorter lead times), in identifying new supply chain nodes or aggregating/disaggregating some information on demand (on digital platforms in order to create new customers value, e.g. with e-commerce) (Devold, 2017).

Digital technologies can help in many steps; for example, whenever there is a process order waiting for production capacity to be allocated, or whenever there is capacity that risks of being unused. With the use of digital technologies, sales operations and planning can benefit from the overcapacity fast allocation and customers' needs can be properly addressed (especially in periods of processes customization and products standardization).

Consultants with industrial and functional knowledge enhance the adoption of business model innovation methodologies enabled by digitalization (IoT, AI / machine learning, data analytics, Cloud, etc.); in this field, consultants are able to work on BXT models (Business, Experience and Technology) together with User Experience/User Interface designers. Once the new digital and customer-focused business model is elaborated and the feasibility phase (with the evaluation of benefits) is completed, consultants use prototypes to validate it and refine it. The comparison of the abilities required in the new business model with the current ones allows the drafting of the blueprint (Schallmo & Williams, 2018). The extended digital ecosystem helps the process of business improvement, in addition to target customers' needs and to develop the new product portfolio. This allows the adjustment of the traditional business model (including company value, mission, goals, process and activities) to the new digital business model.

In this context, consultants provide their professional services to enable clients to design, engineer, implement, migrate and manage workloads and applications on several software and tools.

SalesForce is a cloud-based CRM application (including a portfolio of products in a secure platform) enabling the digitalization of business models (Fagan, 2014). It allows to look for clients, to configure sales quotes, pricing, negotiations, to organize agents with the support of AI and Predictive Analysis (Lager, 2009). SalesForce PDM can acquire B2B/B2C customers' data and manage customized advertising, budgets, campaigns and events. SalesForceCommerce Cloud can perform clients merchandising, promotions, omnichannel order management (integrating predictive intelligence, design mobile-first and agile cloud). SalesForceEinstein Analytics (with AI) can perform customized predictive analysis (Dignan, 2014). Finally, SalesForceIndustries can create solutions for clients from specific industries.

Microsoft Azure is another common cloud computing service in the field of business models definition; Azure can build and manage applications and services with Microsoft data centers in the typologies of Saas, Paas, and Iaas (Copeland et al., 2015). It offers Self-service analytical&BIsolutions (turning company data into analysis), Big Data&Analytics tools (taking predictive decisions, based on data coming from several sources as Point of Sale Systems, e-commerce, socials and IoT sensors), Digital Marketing (creating personalized and scalable digital campaigns), AI platform and SAP on Azure (to run SAP products in MS cloud environment).

AWS Cloud is an Amazon subsidiary offering cloud computing platforms. Consultants can help clients in delivering a proper cloud strategy and adopting agile operation models. In particular, Data Lakes & Analytics is a portfolio of analytics and machine learning services allowing clients to access, store and analyze data, in addition to build data lakes and analytics solutions. Data are moved to the cloud through network connections and applications allow to store on-premises data. It is also possible to catch real-time data (with websites, mobiles, IoT devices etc.), to work on analytics services (Interactive analysis, big data processing, data warehousing, real-time & operational analytics and dashboards & visualizations) and complete predictive analysis (thanks to Machine Learning services).

Finally, SAP Predictive Analytics is a BI software enabling companies to analyze a big set of data and predict future outcomes. This advanced analysis tool, available stand-alone on premises (creating and maintaining predictive models) or as an "all in one cloud" solution (business intelligence, collaborative enterprise planning and predictive analysis), helps businesses to analyze churn rates, potential products, sales channels efficiency, regional performances and customers segmentations (SAP, 2018).

In the Customer Analysis phase consultants offer several methodologies for Customer Journey Design to illustrate customers' expectations/experience and get the most from Digital Transformation. Starting from the AS-IS customer status is possible through design models (e.g. storytelling, cart sorting etc.) to analyze customers decision making process together with the TO BE picture; this helps companies to evolve in Digital Transformation (analytics, mobile, cloud, IoT etc.) and to enhance their customers experience. Once the digital possibilities are overlaid upon the customer journey, it's possible to improve/change the current business model (Kuehnl et al., 2019). Customer journey design

is always dynamic, and the information collected with the support of technology can trigger several "digital touch points" with the customers (enhanced by Digital Transformation) (NttData, 2015).

Consulting companies can work also with eye tracking software, helping their clients to predict user intentions based on knowing where they look (e.g. analytics based on visual attention). The combination of software with other tools (e.g. infrared camera, infrared illumination etc.) is useful in getting some behavioural diagnostics insights (e.g. for advertising purposes) (Arbulu et al., 2013).

Another software often used in Customer Analysis is Google G-suite, a productivity tool for cloud computing and collaboration. Consultants can offer their skills on Google to help their clients to evaluate and to enable their move to the cloud for analytics, improving their processes and enhancing their customers' experience. One of the solutions enhanced by Google Clouds (Cloud and analytics transformation) enables companies to access technologies, app tools, data & analytics with cybersecurity. In addition, with Google, customers analysis activities are enhanced with the creation of online surveys, getting data & responses in real time, building graphs and charts with the support of Google Sheets.

Also, Product analysis is strongly supported, especially with teardown analysis (products cost analysis and benchmark with competitors) with technologies such as fast prototyping, 3D prints, batch production and customizations (Noorani, 2018). Software used in this phase are focused on the possibility to test in advance products prototypes, in offering to clients customized services & products (e.g. Azure E-commerce offers customized ecommerce experience, improved by inventory management and reduction of shipping costs thanks to historical order information and customer data), optimizing the production process (Bluetrack makes the workflows visible and performs value chain and efficiency analysis through high-precision indoor and outdoor real-time tracking system) and reducing inventories and time-to-market (Predix Tracker helps to understand the real-time sequence requirements in production) (PWC, 2017).

## BUSINESS PLANNING

Big Data and data analytics became an important point of competitive differentiation in delivering the analysis of business processes performances and driving the process of forecast. In this fundamental journey consultants can help their clients with data sourcing (identification, combination and management of multiple data sources), model building (analytics models can predict and optimize business outcomes) and organizational transformation (structuring and managing the organization for a better decision-making process based on the data and models).

These three important aspects cannot work independently and should be part of a common vision, with the coordination and involvement of several managers. In addition, in this process should be clear the strategy on how using data and analytics and the right technology to deploy (Barton & Court, 2013). In data sourcing, consultants can focus clients on specific business problems, driving the identification of relevant data (e.g. customers or manufacturing data). The "creative" support of consultants is also important in the identification of unstructured data sources (e.g. from social media, sensors, processes, demographics etc.). In this phase is fundamental the involvement of clients' CIOs: the IT legacy is a precious source of data and analysis, even if current IT infrastructures don't allow the integration of "siloed" information and the management of unstructured data. In the model building phase, the role of consultants is focused on identifying clients' business opportunities and how the new model can improve the performances (in a less complex way). This creates a practical relationship among the data collected that allows managers to predict and optimize the outcome. The last task of organizational transformation is achieved by consultants helping clients' managers to align the current culture and capabilities with the analytic model. For this reason, consultants elaborate a Strategy blueprint including a guide for the modelling phase (models are compliant with the company's processes and decision-making since managers are facilitated in using Big Data and analytics) together with the indication of intuitive tools and interfaces allowing the frontline managers to use the new

models and algorithms (Sahay, 2018). Consultants are important to reinforce managers' capabilities in working daily with analytical tools; this justifies the choice of many consulting companies to invest in experience centres where clients are invited to experiment real business cases on Big Data and analytics successful implementations.

The consulting activities on business planning are now supported by technologies such as Cloud Computing and Business Analytics. Salesforce Einstein Analytics, Azure, AWS-Cloud, SAP Analytics Cloud and Predix are valuable examples of software.

SalesForce Einstein Analytics, enhanced by AI, can perform customized predictive analysis to support several business planning scenarios (Martin, 2017).

In Azure, the initial phase of data analysis is covered by Analytical and BI solutions & tools, while the predictive models can be built through Big Data and Analytics solutions (based on data from different sources).

AWS-Cloud allows the data access and analysis through Data Lakes and Analytics and with Analytics services is possible to perform interactive analysis, big data processing, real-time analytics, dashboards and visualizations.

SAP Analytics Cloud capabilities are built on SAP Cloud Platform and enhanced by in-memory technology of SAP HANA (in-memory computing allows to quickly process and analyze a huge amount of data in planning simulations and what if analysis). AI and Predictive analysis allow collecting important business insights (through machine learning, search to insight feature, conversational AI, etc.). Several modules are useful to build many scenarios: Smart predict (building predictive models integrated with BI), Smart discovery (helping users to identify the main key strategy drivers, to complete simulations and to take actions through dashboards), Smart transformation (able to automate data preparation and to facilitate the work of predefined models), Smart insight (allowing to quickly understand complex data thanks to NLP and Visual explanations) and Smart Grouping (comparing specific data points, as customers groups, based on specific parameters).

Finally, Predix is a software platform (in the model PaaS Platform as a service) for the collection and analysis of data from industrial machines; in this way, it's possible to perform predictive analysis and to implement statistical analysis, data mining and retrieval processes for Big Data (with the possibility to identify trends and insights). These functionalities are extremely useful to the business planning activity (GE, 2018).

## BUSINESS VALUATIONS

The use of data analytics is rapidly expanding and it represents a good opportunity in "stand-alone vs with synergies" valuation of businesses. Since business valuation is crucial for many types of projects (e.g. M&A, competitive negotiations, etc.) consultants help clients to leverage on business analytics tools by collecting relevant historical and predictive data, and ultimately, in transforming them into strategic information (e.g. scenarios analysis). Business analytics play an important role for strategic planning in delivering tactical value (through the correct selection of value-added initiatives and activities), in creating competitive advantage (in line with business goals) and in preparing potential scenarios to implement new strategies.

Strategic Planning activity is focused on targeting opportunities for growth (e.g. pursuing innovation with impact on the market, by differentiating from competitors) and for this reason, it's important to collect information on industry trends (identifying opportunities), on competitors and on customers' expectations. AI and machine learning can be extremely useful (data crunching and visualization) especially in projects focused on synergies valuation (e.g. M&A).

Many consulting companies use Python, an open source general purpose programming language used to build enterprise programs (to embed analytics) and perform analysis on large amounts of data; Python is one of the most popular languages for data management and analysis. In particular, Python data analytics stack addresses any step of the analytics workflow. These tools are assembled

in Python libraries. There are libraries importing and assessing outline analysis and statistics (Panda), performing metrics and mathematical operations (NumPy and SciPy), applying machine learning techniques (Scikit-Learn) or processing a huge amount of data (Apache Spark). Client companies benefit from the possibility to analyze a huge amount of data (structured or unstructured), to keep the deployable codes and to get models to predict future strategy or operational scenarios (Nelli, 2015).

### M&A

Digital capabilities can be applied to M&A activities in a few ways. More and more M&A consulting professionals are familiar with virtual data rooms providing a secure online environment (regardless of the location of team members) or allowing the review of the huge amount of data associated with potential targets. Cloud-based enterprise resource planning systems can simplify some recurring IT problems during the integration phase (e.g. the integration of different software suites). Natural language processing allows the M&A team to easily analyze an enormous quantity of contracts and documents (in an automated way) and data visualization tools help to discover, behind complex financial figures, some important hidden insights. Finally, several businesses use crowdsourcing initiatives to identify potential M&A targets (Deloitte, 2018).

Meanwhile, a new class of software can be applied directly to the core M&A activities (target research, valuation and post-merger integration), as well as addressing the so-called soft disciplines (e.g. employees' engagement and corporate culture enhancement) that once seemed outside the scope of technology. These activities are now more efficient thanks to the use of digital tools (often sponsored by external consultants) able to automate and digitally enable the core M&A processes (Kotarba, 2018).

## TARGET SCREENING

Targets scouting tools can literally narrow down the list of potential targets based on selection criteria (defined during by the acquisition strategy) and speed the approach and negotiation phases. During the screening activity, the tools collect data of potential targets coming from external sources; it analyses industry trends, growth paths, and financials with the purpose of short listing the most interesting targets. An interesting function is represented by "simulators of acquisition scenarios" enhancing proficient discussions on growth pathways.

Emerging tech radar (like graph analytics) can support this phase thanks to graph analytics algorithms (useful to read and interpret graphs). In particular graph analytics algorithms can help to perform centrality analysis on a big group of potential targets.

NLP as part of AI can help in processing, understanding and producing a huge amount of data; it can work with huge amounts of textual data, synthesizing key information or analysing texts that include several opinions on target companies.

Also, semantic analysis can have a strong application on the selection and short listing of target companies for M&A. This can happen by comparing a long list of companies (from several data sources) with the keywords indicated in the M&A selection criteria, or by recognizing (e.g. with grammatical modelling) specific businesses competencies. The reliability of the information is confirmed by the semantic analysis tool (cross-referencing the outcome with information already online) (Casat & Shan, 2002).

Digital ecosystem scouting is a technology used to enhance target screening (data incorporated is coming from external sources) and to narrow down the targets of a potential acquisition. It's useful to analyze industry trends and compare targets data (growth, financials, etc.) based on selection criteria identified by the acquisition strategy. This can really help the company to quickly progress to discussion with the shortlisted targets, based also on simulations of acquisition scenarios (focused on growth trends and potential synergies).

Finally, since more companies are now relying on crowdsourcing tools for identifying potential targets, a tool like Bright Idea commonly used. With Bright IdeaJumpstart Employee Innovation employees can be involved in the identification of selection criteria (discussions on company values, targets, processes and projects) and market opportunities (e.g. new markets, high performing targets). In addition, Bright Idea Transformation tools help in the targets identification (e.g. with gig economy platforms matching selection criteria with the companies in the market) by testing and ranking them based on their potential.

## PROJECT MANAGEMENT

Project management tools can easily, in complex transactions, help consultants in coordinating the dependencies between the huge amount of activities and milestones completed by several teams.

In particular, data visualization tools are able to identify critical milestones, by combining several work plans and highlighting information on key risks, issues and dependencies. These tools are in part supported by consulting companies' database of similar roadmaps in the industry that help the quick identification and management of the interdependencies. Once identified these interdependencies, the tool can also help project managers in the analysis of relevant gaps and elaboration of mitigation plans to address them.

Organizational design digital tools allow the project leaders to draw (with a logical approach) the future post integration organization leveraging on key talents critical for this process. The workforce alignment (based on post integration goals) is facilitated by using internal data and industry benchmarks (always provided by consultants) finalized to creating custom organizations and cost models. In addition, the new organization will impact also on future company culture.

Purchase accounting tools can simplify this complex process by aggregating data and reducing errors and processing time for journal entries (including documentation), calculating automatic periodic adjustments (periodic purchase price, deferred taxes, goodwill and currency translation) and automating the error-checking activities.

Divestiture financials processing tools help to map the main drivers of the business through the elaboration of historical financials that are automatically adjusted. In this way, the time to close (from data acquisition to audit) is dramatically reduced.

The selection of the appropriate M&A tool should be done with the support of consultants helping to speed the process, to make it more efficient (in term quantity, accuracy and reliability of the insights produced) and less expensive; in particular, the tool should be able to fit into the company strategic approach to execution, enhancing collaboration, decreasing manual activities and finally should not pose any security concern (Zhao, 2018).

### Due Diligence

One of the most important phases of M&A is the due diligence since from the outcome of this activity depends on the success of the deal, the negotiation and the integration phase. With the use of digital technologies, the due diligence time can be reduced by 30- 90%.

Business applications based on artificial intelligence (e.g. the Brain, Kira, etc.) and cognitive computing could represent a great resource able to analyze data during the due diligence and to understand the connection among all the data elements. After identified the main threads in a due diligence, consultants can use systems (Kira Systems, Seal Software, eBrevia, Rage Frameworks) able to reduce time and overheads in the phases of gathering, processing and presenting data.

The adoption of AI during an M&A process can really take the emotions out of the process and help both buyer and seller willing to transparently share the info, to avoid risks and discover new opportunities (Burdon, 2016).

The Legal area is not the only one to benefit from digital technologies in due diligence. Other areas can be strongly interested, like human resources, finance, product R&D engineering, sales and

marketing, asset management (uncovering asset reporting discrepancies potentially missed), real estate and operations. The digital support is fundamental also in international M&A transactions where multiple languages are involved.

Kira is one of the most used machine learning software since it's able to identify, extract and analyze texts in contracts. This technology, initially conceived to review thousands of contracts (not already organized in a common file format), is enhanced by powerful machine learning tools (e.g. Quick Study) allowing all users to teach this AI system to identify and extract any provision from any type of contract (Kira, 2017).

In M&A due diligence, spinoffs and divestitures this tool helps to review contracts (errors and unexpected liabilities) since data is extracted, analysed and properly reported.

During the phase of client contract analysis and advisory it allows analysing a mass of contracts that usually are reviewed only in the post-merger integration phase (with the risks to discover missed exclusivities, provisions, indemnities, obligations). In the traditional activity, there is usually a loss of ~5-12% contracts value due to lapses in the administration of contract obligations (e.g. invoices to be issued, credits to be asked and renewal dates on auto-renewal contracts).

These functionalities can be also useful in the areas of contracts simplification /optimization (improvement of templates and playbooks by identifying standards and outliners), obligation management (tracking and management of the required activities like notices, confidentiality agreements, exclusivities, indemnifications and insurances), revenue recovery and cost savings (identification of missed opportunities to reclaim revenues or to eliminate costs by checking renewal dates) (Hanson, 2018).

This software can also help in the fields of real estate advisory and transactions (by summarizing the terms of lease contracts), Knowledge Management (consistency and accuracy is assured with the identification of any clause and reorganization in a standard language on a document repository), Deal Points and Market Intelligence Studies (with the reorganization of previous deals data in deal point studies and market intelligence reports), risk management and compliance/potential new business lines (contracts review allow the identification of non-compliance with CA rules, export control, regulatory issues) and foreign and multi-language contract review (the system can be trained to recognize any important provision/clause in any language in order to redirect the contract to the right expert).

Finally, there are many other technologies used by consultants to support their clients in speeding due diligence activities through data exploration and interactive visualization, collaborative work tools, data analytics and visualization tools.

Tableau is a visualization tool allowing to connect to a huge volume of data. In this way, consultants' clients can bring spreadsheets and databases in big data sources and create interactive deliverables (visualizations, reports and dashboards). In the past, data preparation was performed by technical profiles, such as data engineers and data scientists and, only once the data was prepared, analysts and business users were able to work with their analysis. Tableau Prep allows any user to prepare data faster and more intuitively, to safely combine/model/clean up data and to take better business decisions. The tool enables to summarize and visualize graphically many records of data analysed (charts, graphs and maps). In this way consultants can work on data and, using several visualizations/interacting views, are able to answer several clients' questions.

G-Suite Hangout is a tool able to facilitate the collaboration and interaction among the due diligence team members. In particular with Hangout Chat is possible to rely on a messaging platform and dedicated virtual rooms (hosting projects and conversations per threads, with progress monitoring); in addition this tool helps to upload items from Drive (enhancing collaboration on documents), to attend online meetings (with Hangouts Meet), to use Google's search engine (when members are looking for rooms, past conversations and shared files), to inform when files are shared and to schedule automatically meetings (since it's integrated directly with members' Calendar).

Finally, Microsoft SharePoint is a Content Management System (CMS) software platform, with the purpose to share information and/or documents in different ways; for example, it's possible to

create lists, document repositories or synchronize calendars. It enhances teamwork with dynamic and productive team sites for each project team, department and division (in or outside the organization, via PCs, Macs or mobile devices). Thanks to powerful search features, it's possible to look for information, skills and insights. The SharePoint content-management allows the team to increase and share the level of knowledge on the project (e.g. on contacts or past conversations).

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