

A Direct Research Project, presented as part of the requirements for the Award of a Master Degree in Management from NOVA – School of Business and Economics

Digital Transformation at Turismo de Portugal

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Abstract

This direct research project aims to provide Turismo de Portugal (TdP) with a digital transformation framework and an industry based overview of Tourism and Digital Transformation trends, through an action pack of initiatives to be developed. A benchmark of digital transformation best practices in the Tourism industry was collected and a digital maturity framework applied in TdP to position their status through a short survey. Collaboration, poor systems integration, tool complexity and duplication, and process-based organization, were found to be major issues. Given the current reality, change management practices, associated with a technological and strategical alignment, were considered to attain a successful digitalization pilot.

Keywords: Turismo de Portugal, Digital Transformation, Digital Maturity, Tourism, Travel

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Introduction

It is all about being disruptive, and not being disrupted!

Tourism is one of the strategic innovation drivers for Portugal. Turismo de Portugal (TdP) is a public-sector institution responsible for regulating and implementing touristic activities in the country. Being a governmental institution, there are several modernization and transformation blockers which are common in public Portuguese institutions. However, considering a continuously growing digital trend in the traveler's journey, there is a need for organizations to deal with large amounts of data and to understand how to interact and engage with the new generations, whether as travelers or workforce directly. Moreover, given the exponential number of small and medium businesses who are now arising as startups (for example), there is a need to modernize and become a “*glocal*” (think global, act local) reference for other tourism players worldwide. In this direct research thesis, key digital transformation (DT) initiatives focusing on three main pillars - Technology, Strategy and People – will be presented and discussed considering Turismo de Portugal realities and goals, attained from a short survey and interview. DT best practices in the industry and strategic elements for change management will be discussed and a Digital Maturity Framework presented to understand data awareness and engagement. The final output regards a DT framework to be adapted to TdP plus an action pack of initiatives considering employees issues raised in the survey.

Research Questions

1. How can Digital Transformation bring value to TdP?
2. How can we engage TdP's people, culture, strategy into a DT process?
3. Which benchmark or best practices can be used to build a business case?

As a result, an action pack of future digital transformation initiatives and high-level framework will be proposed to integrate and promote adoption in TdP, although further work needs to be

carried out since a deep data analysis and more contextual information lacks in the present thesis.

Methodology

Regarding methodology, primary and secondary research was conducted. On a primary level, one in-person exploratory interview with a staff member from TdP was done (see Appendix 1) and a survey (see Appendix 2) was proposed to assess TdP' s current workplace and digital maturity. The survey had 8 parts (General, Problem Assessment, Tools, Processes, Data, Digitalization, Digital Maturity Assessment and Other) with a total of 65 questions, with 6 open queries. Questions were based on Forrester Digital Maturity Model (Forrester, 2016) and University of Chicago's Data Maturity Framework (University of Chicago, 2017). At a secondary level, research was mostly conducted online (scientific papers, articles, annual reports, relevant websites) to assess trends and benchmarks in the tourism industry and DT processes. Given DT's literature is changing at a very high pace, respected articles from consulting and specialized firms, and citations from reliable sources, were used throughout this direct research project.

Literature Review

Digital Transformation (DT), can be defined *as the use of technology to radically improve performance or reach of enterprises*. (Capgemini Consulting, 2011). It is estimated that, *by 2020, 25% of the world's economy will be digital* (Gartner , 2016) and that, *by 2017, 25% of all market leaders will lose their top spot to a company founded after the year 2000* (Gartner 2013) because of the newcomer's ability to use digital technologies more intuitively and effectively. IDC forecasts that *by 2020 there will be nearly 45 zettabytes of data, or almost 20,000 times the total amount of data that existed in the world less than three decades before* (Kanellos, 2016). Moreover, according to Accenture's CEO Pierre Nanterne (2016), "digital is the main reason why just over half of the companies on Fortune 500 have disappeared since the

year 2000". The impact of digital in tourism is very significant and, *understanding and capitalizing on changes in the business environment are essential to sustained success* (Zheng Xiang, 2014). According to the same paper, tourism is an industry where there is a vast product marketplace which includes several players such as airlines, hospitality suppliers, rental suppliers, etc. *Products traditionally perceived as secondary (museums, festivals, events...) have increasingly come to the forefront on the online market and have the potential to drive further online growth.* Tourism has experienced different levels of development in the different regions of Portugal (Jaime Serra, 2013). Portugal is currently ranked 15th in the Digital Economy and Society Index, out of 28 countries, having improved its score in all dimensions, except for public services (European Commission, 2017). Achieving development through tourism has several factors to consider three of which are *(i) the degree of social adaptation to changes, (ii) intervention of state and (iii) existence of tourism planning* (Garcia, 2014). Having that in consideration, every business model needs to re-adapt and be managed according to industry trends. This requires *anticipating the need for change or renewal and constantly adapting to the changing circumstances of the firm and the environment* (Demil, Lecocq, & Ricart, 2015). Strategically speaking, in an era where technology is becoming more obsolete faster than ever, the need to adapt for changes and incorporate new trends in the business models is of the utmost importance. Another source of digital revolution nowadays regards data. A great part of major *tourism information processes and transactions is handled electronically* (M. Fuchs, 2010) and electronic traces from *travel-related activities is stored in various knowledge sources* (Matthias Fuchs, 2014), usually in the tourism destinations or company's servers. *95% of travelers use online channels to gather their travel related information and about 93% indicate that they visit tourism web sites while planning vacations* (Eleonora Pantano, 2013). Social media and online tools represent a major decision factor for today's travelers and ought to be a priority of any institution managing touristic activities since, in the

tourism context, *customer engagement has been found to boost loyalty, trust and brand evaluations* (Harrigan, Evers, & Morgan Miles, 2017). Furthermore, given the effect of online consumers reviews in the tourism sector, *tourist sectors are forced by social networks (TripAdvisor...) to define new strategies for replying to market trends* (Eleonora Pantano, 2013). In the digital age, IT innovations and projects should be developed through joint interdisciplinary teams in business units and not by business-only departments or a “shadow” IT departments. *Innovations must be developed quickly and are a result of a close collaboration of business and IT* (Ahlemann, 2016).

Internal Analysis

Turismo de Portugal Overview

Turismo de Portugal I.P. (TdP) is the Portuguese public entity that regulates and controls touristic activities in the country, reporting to the Ministry of Economy and Innovation, being responsible for the promotion, valorization and sustainability of tourism activities (Turismo de Portugal, 2016). TdP, as a fully integrated structure, is a result of a merger between four public organisms which, before 2008, had their action fields in the tourism sector. On an organizational level, TdP is organized within three main pillars: Planning, Business and Support. This structure is organized on 24 organic units, employing 629 people in 2017, having four management bodies (Management Board, Gambling Committee, Single Statutory Auditor and Credit Council) within the structure. In the 2016 World Travel Awards, Portugal has won 24 categories and TdP has been elected as the European Leading Tourism Board for the third year in a row (Turismo de Portugal, 2016), which clearly states the need for competitive advantage strategies and digital transformation processes in a constantly changing area.

Mission, Vision, Strategic Objectives

TdP’s mission is to (i) enhance and develop tourism infrastructures, (ii) develop training opportunities, (iii) support investments in the sector, (iv) coordinate the promotion of Portugal

as a tourist destination – both internally and externally, and (v) regulate and inspect gambling activities. The vision for Tourism in Portugal is set on three main areas: (i) be one of the fastest growing touristic destination in Europe through (ii) a qualified and competitive offer which will (iii) transform the sector in one of the Portuguese economic growth drivers. The entity is transforming itself from a process-based organization to a knowledge-based one, focusing on the development of integrated systems (based on business intelligence and market relevance), partnerships and scientific research on tourism (Turismo de Portugal, 2017).

External Analysis

Tourism industry analysis

Worldwide direct contribution (see appendix 3 for more detail) of Travel & Tourism for global GDP was 3.1% in 2016, forecasting to 3.8% in 2017 (World Travel & Tourism Council, 2017). Tourism is a key strategic driver for the national growth and one of the fastest growing sectors, representing directly 6.4% of the total Portuguese GDP in 2015, forecasting to rise by 3.6% in 2016. Moreover, considering direct contribution to employment, Travel & Tourism represented about 7.9% of total employment in 2015, forecasting a 9.6% contribution in 2026 (World Travel & Tourism Council, 2016). Moreover, *digitalization in aviation, travel and tourism is expected (2016-2025) to create up to \$305 billion of value for the industry through increased profitability and a net displacement of current jobs in the industry, partially offset by the creation of next-generation skilled jobs inside and outside of the travel ecosystem* (World Economic Forum, in collaboration with Accenture, 2017). Appendix 4 shows a brand, travel, aviation and tourism ecosystem considering how digital innovation is shaping customers' expectations.

Trends in Tourism

Tourism has changed significantly in recent years and will continue to embrace new waves of digital transformation. Four main macro trends can be mentioned for the Tourism industry (World Economic Forum , 2017): (i) living travel experience which involves seamless travel

experience fully blended with travelers routine, (ii) enablement of a travel ecosystem enabling alliances and collaboration from a B2B perspective, (iii) digital enterprise with technology innovations which will transform not only operations but also the workforce and (iv) Safety & Security regarding identity management, customer trust and public safety. In order to maximize the value of digitalization in the sector, three main actions for DT success have been identified: (i) transform legacy systems into agile interoperable platforms, (ii) support the transition of the workforce by reskilling the workforce and empower educational institutions and (iii) develop a multistakeholder approach involving private, public and civil-society organizations to deliver regulatory frameworks that define the appropriate uses of data (World Economic Forum, in collaboration with Accenture, 2017). Moreover, three main points were identified as industry trends for Travel & Tourism: (i) growing demand for travel, (ii) the rise of the digital consumer and (iii) changes in the security landscape, all three being related to digitalization and the way travelers are changing their behavior. On a broader level, other trends industry may be referred: (i) Millennial generation (Digital Tourism Think Tank, 2016), (ii) senior travel boom, (iii) female solo travelers, (iv) remote working, (v) sustainable tourism, (vi) food tourism, (vii) wellness trend and (viii) experiential travelling (Treksoft, 2016). On a tourism-related technology perspective, (i) **augmented reality** (AR) which may be applied to (1) museum interactivity, (2) enhanced booking experiences, (3) AR browsers in the destination, (4) gaming, (5) AR translation and re-living historical events (Digital Tourism Think Thank, 2016); (ii) **Intelligent automation** (robotics, 3D printing, AI & IoT), (iii) **social platforms** and **search engines** with embedded machine learning (World Economic Forum, in collaboration with Accenture, 2017).

Local best-practices in the Tourism Industry

Reinventing a City Through Technology – a short review of Barcelona

Tourism Office in Barcelona had the challenge to promote the city in a more technological and tourist-friendly way. As a result, they intended to have both the city and the touristic resources working together as a brand. Hence, the VTO (Virtual Tourist Office) was created to make “information available at the tourist’s fingertips – everywhere”. To do so, a multi-language app running on mobile devices, leveraging open data content, was proposed enabling the average user to have access to a large amount of geo localized touristic content, providing a seamless experience and social network connection. Moreover, leveraging the concept of a Smart City driving innovation, the City Council aimed to reinvent the city through technology, including several internal security and identity services, big data analytics, CRM and ERP, mobile device management and communication and collaboration tools (Microsoft, 2015).

Hainan Province investment for Chinese Tourism

Hainan Province envisioned the development of innovative technologies and applications that bundled Chinese tourism-related services and report data for the Chinese government to allow business intelligence analysis and planning through a private cloud solution (Microsoft, 2013).

Tourism Ireland

Tourism Ireland is a public-funded organism responsible for the marketing of the isle overseas. They intended to leverage their social media channels and provide a deeper look at their customers and enable them a personalized experience through CRM and BI tools (BSD, 2014).

Developing Leader for Change and Innovation in Tourism - Malta

A significant shift in the type of tourists visiting the country has changed over the last years and, as a result, a pilot with tourist officers leading the change program internally was run with

excellent results, equipping the local industry with more tools to enhance tourist satisfaction (Centre for Strategy & Evaluation Services, 2013).

Innovation systems in Nordic Tourism, (Huijbens, et al., 2008) relating not only digital but social and governmental factors presents 10 local best-practices which consider public institutions involvement in tourism innovation. On a Portuguese governmental level, although not directly tight to the Ministry of Economics, great digital transformation examples are already arising from, for example, the Justice Department (Portugal, 2016) and the Health sector (SPMS, 2017).

Digital Transformation

Trends

Four disruptive forces have been identified as global trend breakers: (i) industrialization and urbanization in emerging economies, (ii) disruptive technologies, (iii) an aging world and (iv) greater global interconnections (McKinsey, 2017). Consumers are getting more digital than ever and, as a result, technology will continue to give rise to innovative entrants and disrupt incumbents (McKinsey, 2017). Consulting firms and strategy firms all consider similar bets and trends regarding DT, with specific nuances according to each vertical. Global forces will rely on innovative technologies and define the market trends according to the industries. When referring transforming technologies, eight are to highlight (i) artificial intelligence, (ii) autonomous vehicles, (iii) big data analytics and cloud, (iv) custom manufacturing and 3D printing, (v) IoT and connected devices, (vi) robots and drones, (vii) social media platforms and (viii) blockchain, are the ones expecting to have the most impact on several industries (World Economic Forum, 2017). KPMG presents six big bets for DT (KPMG, 2016) : (i) **Cloud based services** (see appendix 5 for cloud tech adoption main reasons), (ii) **digital labor**, *as the automation of labor by leveraging digital technologies to augment or automate the tasks undertaken by knowledge workers*, (iii) **omnichannel consumer experience**, *with the re-design*

*of customer experience to meet higher customer expectations by providing a seamless experience regardless of channel and device, (iv) **internet of services**, emphasizing significant opportunities to drive value and monetize the IoT by building services based on capturing, organizing, integrating and analyzing the huge volume of data it produces, (v) **continuous delivery**, building on lean IT, agile methodologies and DevOps, integrating people and processes through automation focused on increasing collaboration across business, development and operations to enable faster, reliable and more frequent deployments to market and (vi) **next generation IT operating models**, focusing on integration instead of building new capabilities (see appendix 6 for a deeper understanding of next IT generation IT operating models).*

DT in governmental institutions

*The Digital Government landscape is continuously changing to reflect how governments are trying to find innovative digital solutions to social, economic, political and other pressures, and how they transform themselves in the process (Janowski, 2015). As a policy instrument, digital initiatives continue to be executed with the expectations to enhance public service delivery, and to lower operational costs, and increase governmental control and data transparency (Mergel & Desouza, 2013). However, due to complex organizational structures, homogenous values and beliefs in the organization (Currie & Guah, 2007), adding to unsupportive legislation and complicated technology, users feel demotivated and unstimulated to the change (Baptista, S, & W, 2010). Technology becomes institutionalized in an organization when it forms as routines of the organizations inhabitants, gradually reducing need for cognitive efforts (Baptista, S, & W, 2010). Digital technology is often used as a *catalyst to shape new forms of organization functions and in helping the government to increase public-sector legitimacy through integration of various functions between public agencies* (Weerakkody, Omar, El-Haddadeh, & Al-Busaidy, 2016). The concept of digital era governance, which highlights contemporary*

technologies as drivers for innovative and competitive government (Margetts & Dunleavy, 2013), aims to transform public institutions into more agile and less institutionally complex agencies, simplifying and automating administrative processes and thus providing a responsive and problem-oriented service to citizens (Fattore, Dubois, Lapenta, & A, 2012). *Information system strategies in the public sector are now increasingly focused on shifting from a government-centered perspective to a user-centered one* (OECD, 2009), where citizen inclusion, participation and satisfaction gain relevance (Scott, DeLone, & Golden, 2009). Governmental innovation is accelerating at a very high-pace, as a result to a continuous growing complexity projects and problems. Although a lot of literature can be found on governmental trends, six are worth mentioning: (i) Tech connectivity, with all mobile devices and need for integrated systems (ii) Intense citizen engagement, allowing people to have a say on their countries' institutional issues (iii) big data, to understand the overwhelming amount of data generated from mobile devices (iv) design thinking, as a problem solving methodology (v) partnerships, with companies and other change agents in the market, and (vi) nudges, corresponding to the behavioral insights and study of how people act (Apolitical, 2017).

Digital Maturity Model

Digital disruption is driving transformation making digital capabilities into the heart of the business as core competencies, not as add-ons. The concept of Digital Darwinism states that digitalization is not only for incumbents or marketing leaders and that every company can, and should, try to do better in this field (Solis, 2015). However, where to focus efforts, how does the firm mature over time and successful KPIs definition require an initial assessment of the organizational maturity and comparative benchmark. In order to assess a digital maturity model, four dimensions can be analyzed, according to Forrester's Digital Maturity Model 4.0: (i) **culture**, which is the company's approach to digitally driven innovation and how it empowers employees with digital technology, (ii) **technology**, which is company's use and adoption of

emerging technology, (iii) **organization**, referring to how aligned a company is to support digital strategy, governance and execution and (iv) **insights**, considering how well the company's use customer and business data to measure success and inform strategy (Gill & VanBoskirk, 2016). Moreover, digital teams must focus, according to the same model, in three key functional activities: (i) **digital strategy**, (ii) **governing digital activities** across the company and (iii) driving **operational excellence** into the digital execution.

Change Management

Innovation in the public sector follows a different path from the private sector (Lamb, 2013). The global market is growing its digital business roles and functions at a very high pace, as a response to a more digital workplace and transformation trends seen every day. However, *despite proliferation of digital roles and responsibilities, most executives recognize their companies are not adequately preparing for the industry disruptions they expect to emerge from digital trends* (Kane G. , Palmer, Phillips, Kiron, & Buckley, 2016). According to the same authors, the main characteristics of a digital culture include (i) appetite for risk, (ii) rapid experimentation, (iii) heavy investment in talent and (iv) recruiting and developing leaders who excel at soft skills. "Strategy, not technology, drives digital transformation" (Kane G. , Palmer, Phillips, Kiron, & Buckley, 2015), brings about a different approach to the ability to reimagine businesses and seek new levels of competitive advantage. In that report, digital strategy is proposed to be worked backwards from a future vision, instead of analyzing current capabilities and then plotting next steps. Digital maturing companies have different behaviors from players less prone to change, being the difference more focused on business technologies rather than technology (see appendix 7 for a comprehensive chart on early, developing and maturing company's behavior). Also, a key success factor in digital transformation is digital governance to allow a smoother change management practice, thus enabling a faster and more integrated business cycle. There are two main elements impacted in a digital governance mechanism: (i)

sharing, involving local unit's capabilities and resources (which includes people and technology) and (ii) coordinating, which refers to local unit's synchronization and alignment (prioritization, compliance with standards and policies...) (Tannou & Westerman, 2012). Many public bodies find difficult and challenging to fund core citizen services thus, when it comes to digital transformation budgets, insufficient funding is considered a top barrier that impedes digital trend development (Deloitte, 2015). According to the same survey, too many competing priorities, security concerns, lack of an overall strategy and organizational skills are also constraints. The need and awareness to become more digital is something desirable in organizations, however there doesn't seem to be a clear strategy and success methods associated with it (Bain & Company, 2015). Reacting and innovating in such a dynamic and instable environment has a great disruption effect on public entities and its respective business models, hence scalable and adaptable models ought to be tailored made to each entity. As mentioned before, digitalization and digital transformation are not just about technology itself but rather a strategic and cultural change within companies (i-SCOOP, 2016), which needs incisive and contextualized models to attain success.

Results

Characterization, Limitations and Overview

The survey was conducted from the 15th to the 19th May and was released per e-mail to all employees by TdP's President Luís Araújo. The total response number sums up to 168 respondents who have completed all questions (considering total number of employees to be 629) representing approx. 27% of the workforce. The present survey was only conducted to better understand TdP's realities, not as a thorough analysis given the time constraints and limitations imposed by the organization. Also, the results should be considered cautiously as they include a non-response bias, mainly due to complex phrasing and survey structure, lack of knowledge from the inquiries, socially desirable responses and length of the sample. Moreover,

due to the short deadline with which respondents were asked to participate and the time to endure in a deep analysis, it is possible that results are due to systematic responses. No causal research was performed, hence results should be viewed only as guidelines for further work and not direct cause-effect relationships. Most of the respondents were *Técnicos Superiores* (36%), mainly from Game & Inspection and Offer Valorization functional areas (both 16.1%). The respondents are mostly between 40-50 years old (45%) and 44% of the sample has been working in TdP for more than 15 years as common in most Portuguese public-sector institutions (figures 1 and 2).

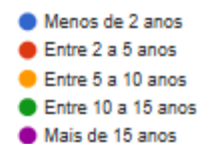
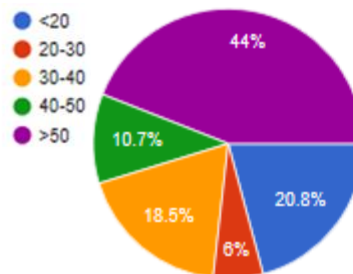
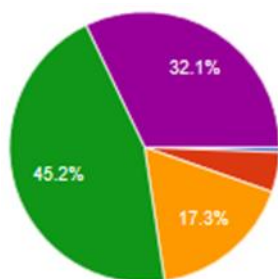


Figure 1 - Number of years as employee from TdP.

Figure 2 - Age intervals for the respondents.

Major problems mentioned in the open-questions from the inquiry may be grouped into four areas (for direct quotes on major problems please refer to table 1 in Appendix 10): Communication (lack of communication and proceedings, poor communication between departments and lack of visibility over projects), Human resources (lack of a career plan and specialized resources, little or no delegation, no flexibility and poor benefits to the workforce, job descriptions are not clear, no exchange between departments and public hiring...), Processes and Organization (distance from TdP headquarters implying knowledge centralization to be based solely in one place, lack of training, planning and overall strategy, budget restrictions for some departments, fear of change, workplace conditions, lack of autonomy...) and IT (poor access to wireless, obsolete and outdated material, legacy systems, data does not integrate and is not user friendly, users are too dependent on IT, duplication and

too many informatic tools, lack of overall coordination...). 63% of the inquiries feel they do not have the resources available for solving the previously mentioned problems but, when asked about the sense of belonging to TdP, 92% consider themselves part of the organization. The tools used by the clear majority are Microsoft Office (94%), followed by internal tools for finance, HR, documental, etc., with 56% of the respondents (67% indicate to have had training for the tools needed daily).

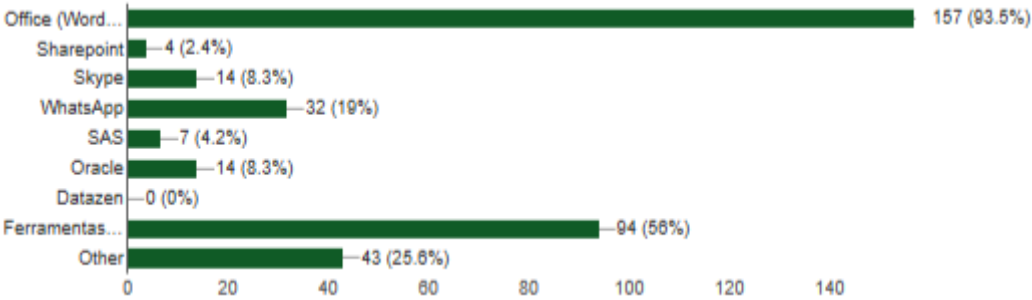


Figure 3 - Tools used by employees.

40% of the sample acknowledges using non-corporate tools for working purposes and nearly 20% admits to sharing corporate information through apps that are not managed by IT. When asked about internal process efficiency, 44% of the respondents feel that processes are not efficient, 68% consider too much time is lost with bureaucratic details and 85% believe automation would make their work more productive. When asked which processes could be made more efficient with digitalization, several ideas were suggested by the respondents (see table 2 in Appendix 10), namely HR requests and justifications, document archiving, application review, project files updated according to the several phases, electronic billing, digital signatures, reporting on online channels engagement, statistic and data integration reports, etc. Regarding data access, despite 90% having access to it when needed, almost 40% believes that data is difficult to analyze and use, and 57% consider that there is no data integration between corporate information. 62% believe digitalization is assuming a more relevant role in TdP and 58% identified organizational culture as the biggest hinder to DT. Moreover, 68% of the respondents believe that TdP leads innovation when compared to other

Portuguese public institutions, despite nearly 30% feeling that their way of work has not changed in the last 5 years. Respondents were also asked if they were aware of any DT measures in TdP and whether they could identify some internal processes on that behalf. Figures 4 and 5 show that 68% are aware of DT processes, but only 35% are able to mention some. Out of those, Q2 and Papel Zero are the two initiatives mentioned more times by the respondents.

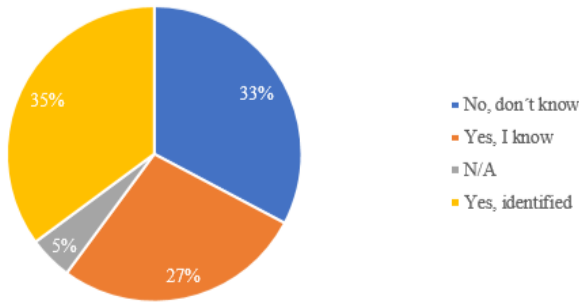


Figure 4 - Awareness of DT initiatives in TdP

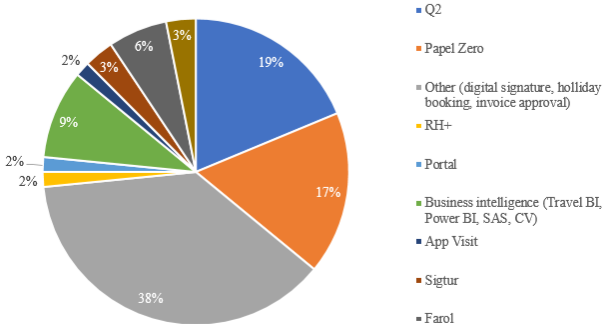


Figure 5 - DT initiatives identified by respondents

Digital Maturity Framework for TdP

Four dimensions (Culture, Organization, Technology, Insights) were analyzed in the last part of the survey according to the questions suggested by Forrester’s Digital Maturity Model 4.0 (Forrester, 2016) and Data Maturity Framework (University of Chicago, 2017), through a determined comprehensive list of evaluation criteria. Survey respondents complained that they were unaware of information to back up their answers (suggesting response bias) hence the maturity levels described below lack a deeper analysis and should not be assumed as a reality.

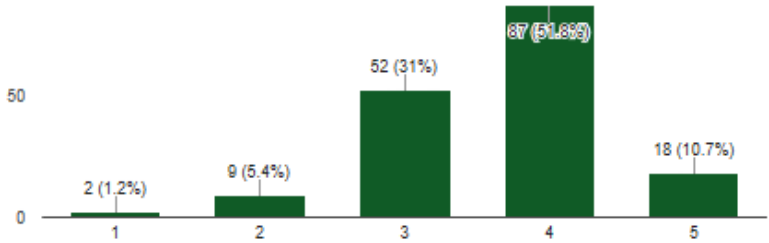


Figure 6 - Personal Assessment of Digital Maturity Level (1 – Very Reduced, 2 – Reduced, 3 – Average; 4 -High; 5 – Very High)

Figure 6 reveals that most of the participants consider their maturity levels to be high, despite some contradictory information in open questions and overall survey, and, through the results dispersion between medium levels, a response bias may also be considered. Furthermore, it could be argued that respondents have a higher digital maturity outside their workplace, although that is out of scope for the present survey. Using Forrester’s model (see appendix 11 for original questions), the survey’s responses were analyzed to enable the sample’s division into four segments, which may help to define a starting point for a DT process (see appendix 12). All individual scores were considered (from 1 to 84) and grouped in intervals of 7 to attain the frequency of the data according to the mentioned intervals, as per Forrester’s guidelines. The results for TdP show a high percentage of adopters, followed by collaborators, skeptics and differentiators (figure7), although it is likely that these levels are inflated due to sample’s response bias, as mentioned previously.

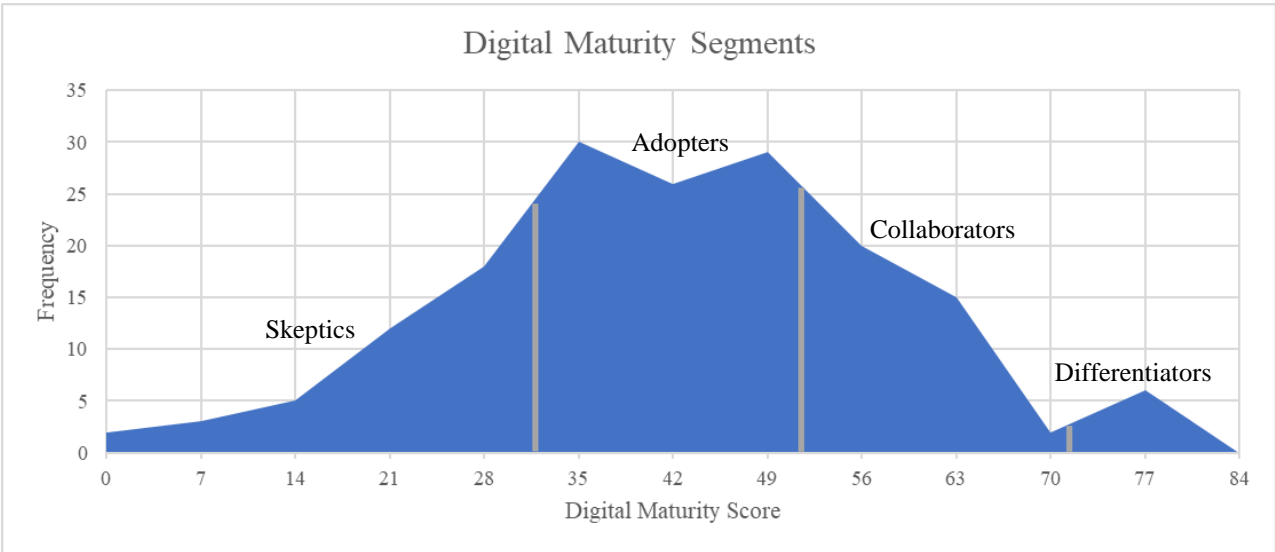


Figure 7 - Digital Maturity Segments for the sample (according to Forrester model)

Scores ranging from 0-33 represent the Skeptics, where most public-sector institutions would be included, which is for companies that do not prioritize digital today. Literature suggests that Skeptics have limited experience in innovation and tend to poorly execute online marketing programs and strategic planning. Recommendations would be to initiate digital projects to enable decision makers to build their business cases, centralize digital resources and re-

emphasize industry experience to recruit digital talents. Scores ranging 34-52 represent Adopters, which corresponded to the biggest interval for the survey with 79 responses, where a digital strategy should be enabled to allow a shift from operational shortcuts to loyalty enablers within TdP. Initiatives to promote marketing beyond execution should be disseminated, digital resources hired (outsourcing may not be the best option) and skills developed internally. Moreover, data operations are to be leveraged, respecting security and privacy regulations, since there is a crucial need for data to enable strategic business decisions and potential business opportunities (which in the case of Tourism is of the utmost importance). Scores ranging 53-71 are the Collaborators, which was the second level found according to the survey, where firms who are keener to collaborate and communicate (both internally and externally) may be found and where digital innovation projects enablement is a reality. Next steps for this level is to align skills and technology with “customer” experience, and understand which competencies are lacking in several functional areas to compensate for talent gaps. Scores ranging 72-84 represent Differentiators, lowest level in the survey, which represents companies that are more digitally skilled, in average, than their peers. Over time, they invest in bringing real-time insights to the physical world, extend digital outside marketing and, overall, channel business and technology energy to the same place.

Proposals

Theoretical approach to the framework

Considering TdP’s digital maturity assessed before (with all the quantitative and qualitative limitations described), DT must be enabled and strategized through all functional areas. In order to provide TdP with an adoption experience for digital transformation, a comprehensive framework based on theoretical and industry scenarios is presented in table 1.

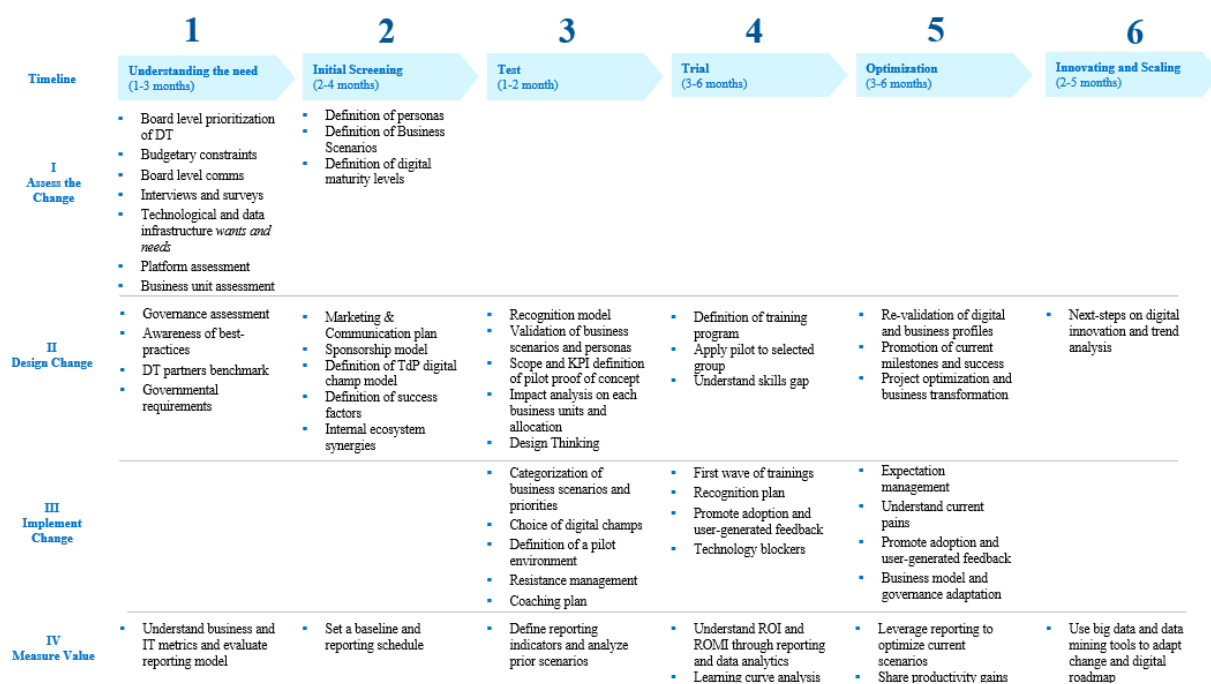


Table 1: High Level Framework for a DT implementation project at TdP (suggested by the thesis author)

Through this high-level framework (more detailed and incisive studies need to be carried out in a near future, more detail on Appendix 13), TdP may be able to start envisioning, planning, designing, building and implementing a long-term strategy for DT (framework considering 26 month period, based on the writers experience, although a short, medium and long term strategies should be considered having into account TdP priorities and budgetary constraints given the fact that they are a public organism). The four cross-functional areas are deeply explained and revised in Appendix 13, considering literature and current trends, insights from the survey and the writer’s view on DT based on market relevance. This framing is likely to suffer adjustments according to the business case and other factors, such as budget, legal impositions, public hiring, board prioritization, commitment levels, etc.

Action Pack

It was considered of the utmost importance, by TdP’s President Luís Araújo, to re-capitalize the touristic sector in Portugal, having also been assumed the unsatisfactory instruments TdP provided to corporate partnerships (Dinheiro Vivo, 2016), which calls for a change on how

processes and work are carried out within the organization, and the need for digital transformation to meet stakeholder’s expectations.

Figure 8 gathers insights from previous pages and summarizes core bonds needed to be actioned in a near future and some high-level relations between IT, BU and Change Management.

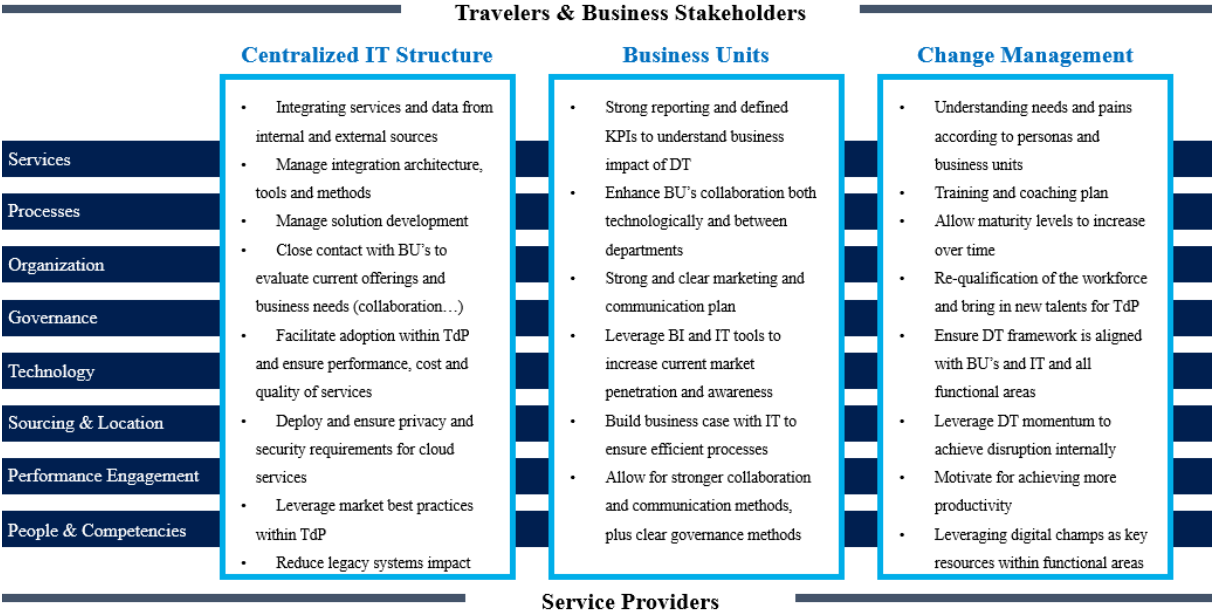


Figure 8 - Ecosystem with major integration points for TdP

The following ideas are based on industry best practices and represent only a few initiatives that may be implemented on TdP as part of an overall DT strategy. Digital skills gap, due to high demand and limited supply of digital skills, is a known reality to TdP, as seen by the survey responses. Internal resources may not be sufficient to allow for a training program to be implemented and scaled in a near future. Different ideas have been already proven to be best-practices in the industry:(i) Gamification Process, innovative recruitment methods to engage with a more digital and tech savvy generation, (ii) Company acquisitions, (iii) partnerships with innovation and DT players in the market, (iv) Internal incubators, (v) training programs with digital players, are just some examples (Capgemini Consulting, 2013). The following five initiatives are meant to act as brainstorm and give TdP ideas to build a future business case, more reasoned and oriented to its reality, with a detailed value proposition and data overview.

Training Incubator – Skills Boost through Gamification and Enterprise Social

For TdP, a mix of social incubator platform and training platforms could be a good strategy. Engaging TdP's collaborators in internal social enterprise networks (Yammer, Facebook at Work, Tibbr, Jive) would accelerate the information flow within the organization and, having groups dedicated to trainings and Q&A, would speed the knowledge transfer process. Every collaborator, according to their profile and business scenario (previously defined by the personas) would have a tailored training program not only on technical skills, but also on skills that would allow them to acquire digital and role-oriented capabilities and would allow them to evolve over time. Also, a video portal with short-video trainings on demand, integrated with the social network, would allow employees to adapt their time to consider training hours during the month (required training should also be considered). Every training awards the employee with a certain amount of points that could be used in an internal gamification process to choose the "digital champs", involving corporate benefits defined by the HR department. Gamification can also be a good means to promote paper reduction within TdP, as a side project. A major feedback from the survey regarded lack of visibility, communication and empowerment which an internal social network would ease and would allow for people outside headquarters to feel more engaged with the organization (also something worth mentioning from the survey). The Department of Housing and Public Works, Government of Queensland, has successfully deployed an enterprise social network, as a potential success story (Microsoft, 2014).

Digital Champs Program – Innovation Masters

Digital champs are strategic individuals, part of several business units, who have the responsibility to evangelize and disseminate digital transformation at TdP. *Innovation Masters* intends to be an organization-led training program to allow digital champs to share their ideas and user-feedback on DT at TdP and to scale their own capabilities, whether on a technical level, but more than that, on a relational/personal level. DT, as referred, is more than just

technology, and the individuals who will become DT ambassadors will promote, provide assistance and evangelize adoption, need to excel at engagement, motivational and inspirational skills to guarantee a successful implementation. Digital champs may be in every department and will also be responsible for leveraging any high-level strategy to their peers, reducing the hierarchy gap felt by some employees. The Government of Scotland has created its own Digital Champs Development Programme as a means to inspire leaders about the potential of DT (Scottish Government, 2015).

Collaboration & Day-to-Day Tools – Reinventing Productivity

Digital workplace trends (mobile, modern design, personalization, social, end-user empowerment, knowledge sharing, task and flow orientation, proactive search and find...) are shaping modern workplace scenarios in most public-sector companies. From the survey and interview with TdP, it was clear that most of the work tools were siloed and that information was not easy to access, use and share, enhancing the collaborators downtime between projects and tasks. Cloud providers, such as Microsoft and Google for example, already provide SaaS (software-as-a-service) solutions (Office 365, Google Cloud) with integrated business apps which allow employees to collaborate in real time through user-friendly and secure corporate means, enhancing their productivity day-to-day. Technology pilots with SaaS providers will allow TdP to conduct a customized proof-of-concept for the organization, targeting direct needs (which may be withdrawn from DT surveys and inquiries proposed as part of the framework in table 1). A proof of concept will be a good means to understand which technologies are being used and which provide more value to the organization. From the survey, respondents complained to be “too dependent on IT” and without enough autonomy, which could be minimized through training and employee self-service processes through knowledge platforms. Some Portuguese public-sector institutions are already investing heavily on collaboration

platforms, but a thorough business case may be found on Forrester's report "The Total Economic Impact of Microsoft Office 365 for Government Organizations".

Turn TdP's data into actionable insights – Data Visualization Technology

One of the key scenarios discussed during the interview with TdP was the lack of integration between data systems and the difficulty for an average employee to use and access that information since no data scientists were employed at the time of the interview. At the moment, TdP has siloed data apps which do not integrate and are not user-friendly, according to the survey. A pilot program, with some of the data-craving business units, and its respective users, could be put into action to assess return on investments and define data standards for the organization, in accordance with the new GDPR regulations - outsourcing or new hire may also be a viable option pending budgets (Starcio, 2016). Integration with pre-defined platforms and a deep needs-assessment should be reviewed to turn data into an agile practice, hence demystifying some pre-conceived ideas of data and thus enabling data-driven decision making. A big investment in SAS Data Management® platform has already been made by TdP, but no training has been given to handle with the platform which could be a good starting point. Moreover, self-service data dashboards to allow for project managers to understand the status of their projects (suggestion from the survey) and departmental content-packs with investments might be thought as well (one of the mentioned problems was that there were various ways to catalogue projects and that it was difficult to understand if a project had already been sponsored or the time it happened). Adding to this, data governance policies should be created (maybe even enabling Data Champions in TdP) and disseminated through the organization. Tourism Australia has deployed a BI solution that allowed to capture, analyze, consume and share critical business data in real time, as a possible case study (Microsoft, 2015).

Hospitality & Business Unit Inquiry Management

TdP engages with several external entities and their Education units through several queries, according to the feedback from the interview with a project manager. That data is siloed in different apps and it’s difficult to analyze and get insights from that information. By integrating an inquiry management app in their cloud intranet that process can be more actionable and visible, enabling data integration in BI systems according to a predefined governance procedure. Moreover, TdP lacks a CRM tool, which could be used to typify some forms and maintain process coherence (which was also a problem identified in the survey). Malta Gaming Authority uses a web-based portal integrated with CRM tools to automate processes and store stakeholder’s information (Microsoft, 2017).

Figure 9 sums up several actions and initiatives for TdP, considering 3 cross pillars within all organizations – Technology, People and Strategy – with the proposed framework (table 1) and the action pack described on previous pages which, simplistically speaking, may work as a potential output for beta projects (kick-off) within TdP.

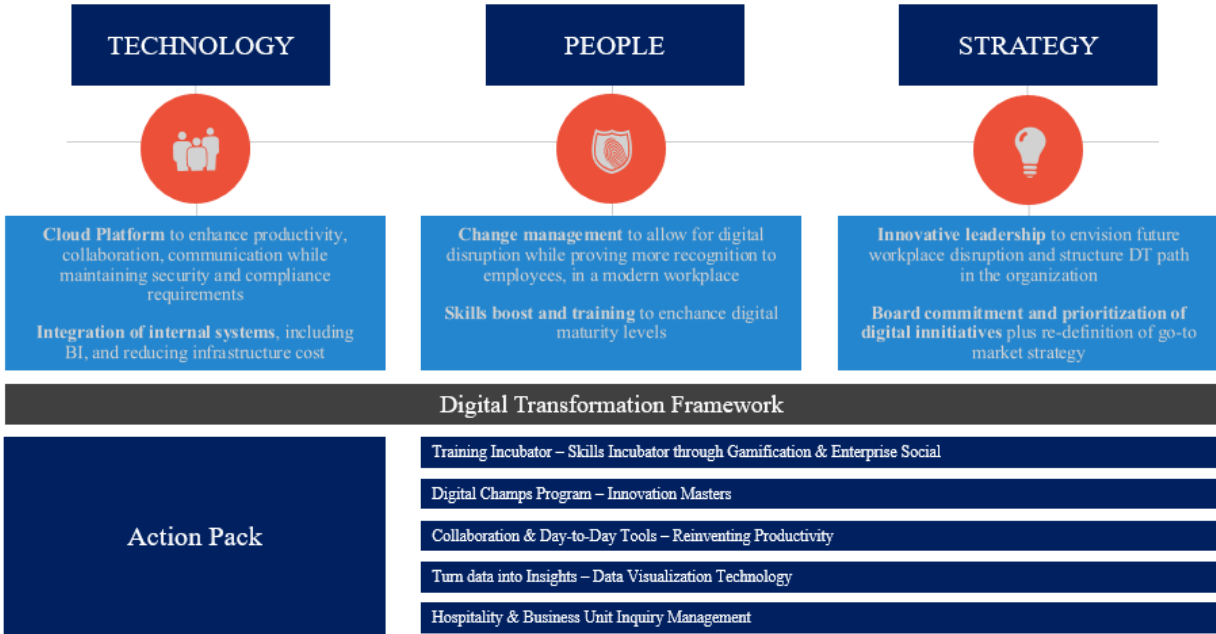


Figure 9 - Matrix aligning major DT areas and proposed actions

Final Remarks

In an increasingly digital world, digital transformation is not just about implementing more and better technologies. It involves digital congruence — aligning the company’s culture, people, technology and strategy. From the sample that responded to the survey, more than 50% are working in TdP for more than 10 years and nearly 80% are above 40 years old, which calls for strategic change management initiatives to be actioned for disruption to occur. People, not technology, drive DT hence, problems and risks raised ought to be considered in formulating a long-term envisioning for digitalization. Major issues found through a comprehensive sample overview regard lack of collaboration, poor systems integration and data-driven decision making, lack of employer recognition and career progress and, lastly, bureaucratic/complex processes internally. As seen in other tourism players worldwide (and current trends), DT is not only a means to change current workplace, but rather to increase efficiency, adapt the current business model to respond in a more agile way to the market needs and transform travelers/business unit’s data into clear business insights. DT’s value proposition to TdP will enable to increase not only employee satisfaction (regarding empowerment, training, processes, collaboration...) but also transform a complex process-based organization into a traveler-centric optimized public institution. Part of TdP’s vision is to transform the Tourism sector in one of the country’s growth drivers which inevitably relates to the service provided by the organization and its market. Portuguese public institutions are already partnering with digital players to transform their services and increase digitalization within their units. A thorough internal and external analysis needs to be carried out and principles/recommendations mentioned through this direct research project applied to TdP’s reality, considering inevitable budget restrictions faced by the public sector.

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A Direct Research Project, presented as part of the requirements for the Award of a Master Degree in Management from NOVA – School of Business and Economics

APPENDICES TO WORK PROJECT

Digital Transformation at Turismo de Portugal

Nuno Miguel Martins Pereira

Student ID: 2587

Project carried out on the Master in Management Program, under the supervision of Professor Leid Zejnilovic

May 26th, 2017

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Appendix 1 – Exploratory in-presence interview

Notes in Portuguese from exploratory interview with Ana Caldeira (Project Manager TdP, direct reporting to Sérgio Guerreiro) - ana.caldeira@turismodeportugal.pt

Disclaimer – no follow-up information from TdP was shared with the student after the interview.

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- Merge de organismos públicos em 2007 onde o TdP foi piloto
 - Muitas aplicações, muitos processos, diferentes culturas e organismos com resistência à mudança
 - Aposta na uniformização de processos e gestão de mudança
 - Menor autonomia para fazer aquisições
- Macro-sistemas transversais, cuja integração não está 100% otimizada:
 - HR
 - Financeiro – Oracle + Outsystems – muito customizado (todos os sistemas ligam, pelo menos, ao financeiro)
 - Documental
- Atual processo de decisão do Conselho de Administração completamente desmaterializado
 - Reuniões virtuais, aprovação de componentes financeiras e documentais também
- Tech
 - Intranet em Sharepoint 2007
 - Acesso a VPN em ambientes externos
 - Cliente de e-mail – Outlook 2013
 - Ainda não trabalham na Cloud as is

- Softwares proprietários da QuidGest, integração com MyOracle e com sistemas de identity management da Oracle
- Não existe sistema de CRM
- Mobile – todos os diretores com telemóveis (técnicos não), todos com acesso a portátil
- Comunicações – Cisco e Jaber (IM, partilha de ecrã, videoconferência), comunicações no estrangeiro com Skype Consumo
- Office – alguns users em 2016 mas grande parte da organização com versões anteriores
- BI – Portal SAS on-prem
 - Decisão foi feita após análise de Tableau, ClickView, SAS, Oracle, Power BI, MicroStrategy (concurso público em 2015, só Oracle e SAS responderam)
 - 1º badge onde os sistemas se tornaram mais maduros
 - Migração de dados de Clickview nos últimos 6 meses
 - Internamente ClickView ainda usado (por exemplo inquéritos para unidades para unidades hoteleiras), mas os últimos foram feitos em Outsystems
 - Possibilidade de juntar Data Quality do SAS ao sistema
 - Social media ainda não integra
 - Volume de dados demasiado grande levou ao crash do SQL
 - Travel BI - Sharepoint 2013
 - Utilizador final não tem maturidade para perceber o nível de dados disponíveis

- Datazen já foi investigado, mas não responde a necessidades – piloto de PowerBI com a Microsoft + parceiro DevScope (já foi dada formação em Power BI)
 - Sistema de visualização de dados ainda não integra no sistema financeiro, apenas é possível visualizar, em alguns casos, por unidade organizacional
- Projeto Papel Zero – Presidente quer reduzir em 50% (2017 ano da sustentabilidade)
 - Cada área contribui com ideias/iniciativas para reduzir impressões
 - Já existiu um ranking de quem gastava mais papel
- Simplex 2017 (medidas anuais na Admin. Pública)
 - Desmaterialização das reuniões da Comissão Arbitral
 - Análise de reclamações e distribuição de indenizações é um dos processos internos sem plataforma
 - Reclamações, Empreendimentos turísticos e Auditorias estão em Outsystems
 - Escolas de Turismo com processos já desmaterializados – tudo online
 - Matrículas em Outsystems
- Inquéritos
 - Necessidade frequente de lançar inquéritos ou alterar os atuais, e subsequente análise. Atualmente em Outsystems, investigar outras possibilidades
- HR
 - Falta de um mindset mais tecnológico bem como recursos especializados
 - Ausência de especialistas de SQL
 - Colaboradores que percebem de estatística, mas não análise de dados – não existem Data Analysts
 - Ausência de recursos especializados em programação

- Project Management
 - Reports não automatizados, e sem permitir uma visualização de “portfolio”
 - Poucos utilizadores com MS Project
 - Apesar de alguns recursos com certificação PMP, ausência de metodologia de gestão de projetos no TdP
 - Pretende-se capitalizar o SAS e dar visibilidade ao Projeto
 - Inexistência e falta de visibilidade para KPIs bem como análises de ROI, RoMI...
 - Grande necessidade de forecast (não é feito atualmente) para budgeting, investimentos, ROI de investimentos e fundos associados
 - Alguns investimentos não passam pela plataforma – necessidade de uniformização de processos para assessment adequado
 - RegFines – linha de apoio para patrocínios reduzidos

Cada unidade de negócio analisa conforme pedidos, não existe um registo de pedido, existe por vezes possibilidade de se apoiar 2 vezes o mesmo projeto – impossibilidade de calcular retorno para a organização e patrocínios futuros com base no sucesso

Appendix 2 – Survey questions

The survey was sent to TdP in a Google Survey format.

Intro Overview: *As part of a NOVA SBE and Turismo de Portugal (TdP) project, the present questionnaire will enable us to understand TdP's current digital maturity status. It should take no more than 15min and will have a great impact on TdP's way of work. Your answers will be evaluated as part of the Project and not individually (your personal information will not be asked or tracked).*

I. General

- a. [OPEN QUESTION] Role in TdP
- b. [CHOICE] Which functional area best fits your current reality?
- c. [CHOICE] Age
- d. [CHOICE] #years in TdP
- e. [Y/N] Do you feel part of the organization?

II. Problem Assessment

- a. [OPEN QUESTION] What problems do you face internally in the organization?
- b. [Y/N] Do you have any resources available to help you solve some problems mentioned on the previous question?

III. Tools

- a. [CHOICE + OTHERS>if other specify] Which tools do you use the most in your day-to-day work?
- b. [Y/N] Did you have, or have had, training for the tools you need to use?

- c. [CHOICE > Facebook, Instagram, LinkedIn, Tweeter, Other > please specify]
Which personal social networks do you use, at least once on a weekly basis?
- d. [Y/N] Do you have a corporate mobile phone?
- e. [Y/N] Do you have a laptop to work on?
- f. [Y/N] Are you able to work from home?
- g. [Y/N] Do you engage with other people through non-corporate tools like
WhatsApp, Messenger, SMS...?

IV. Processes

- a. [CHOICE] How to you share data/information with external users?
- b. [Y/N] Do you feel you have good internal processes?
- c. [Y/N] Do you feel you lose too much time dealing with bureaucracies?
- d. [Y/N] Do you feel there could be more process automation internally?
- e. [Y/N] Do you feel you could reduce paper use by working more digitally?
- f. [OPEN QUESTION] Can you provide a process that you believe could be
improved?

V. Data

- a. [Y/N] Do you have access to data when you need it?
- b. [Y/N] Do you have permission to use the data?
- c. [Y/N] Do you know where to find the relevant data for your job?
- d. [Y/N] Do you find data confusing or difficult to use?

- e. [Y/N/OTHER] Can you access data outside your local workplace?
- f. [Y/N] Do you need to work the data provided or is it ready to use/visualize already?
- g. [Y/N] Is your local data integrated with other data sources (connected systems)?

VI. Digitalization

- a. [CHOICE > Greater, About the same, Declining] Would you say digital technology is becoming a more or less significant factor for Turismo de Portugal?
- b. [CHOICE > Culture, Leadership, Legacy Systems, HR, Lack of Vision, Other > please specify] Identify the major barrier for digitalization in Turismo de Portugal
- c. [Y/N] Do you feel TdP is leading innovation when compared to other Portuguese institutions?
- d. [Y/N/NA] Is your way of working (tools, processes...) different from what it was 5 (or more) years ago?
- e. [SCALE, Low to Proficient, 5 levels] Rate what you consider your current digital maturity level to be:
- f. [Y/N] Does your direct supervisor support DT?
- g. [Y/N, if Yes please specify] Are you aware of any digitalization processes in TdP?
- g. [Y/N] Do you feel your job could be threatened because of new technologies and digital transformation?

VII. Digital Maturity Assessment *(based on Forrester Model)*

- a. *How much do you agree with the following statements? (0 > completely disagree, 1>somewhat disagree, 2>somewhat agree, 3>completely agree)*

i. Culture

1. TdP believes our competitive strategy depends on digital
2. TdP' s board and executives back our digital strategy
3. At TdP we have the right leaders to execute our digital strategy day-to-day
4. At TdP we invest in targeted digital education and training at all levels of our organization
5. At TdP we clearly communicate our digital vision both internally and externally
6. At TdP we take measured risks in order to enable innovation
7. At TdP we prioritize overall customer experience over the performance of any individual channel

ii. Organization

1. TdP' s organization structure prioritizes customer journeys over functional silos
2. At TdP we dedicate appropriate resources to digital strategy, governance and execution
3. The staff supporting our critical digital functions are best in class
4. At TdP we have digital skills embedded throughout the organization
5. TdP' s organization model encourages cross-functional collaboration

6. At TdP we have defined and repeatable processes for managing digital programs
7. TdP' s vendor partners deliver value that enhances our digital competencies

iii. Technology

1. TdP' s technology budget is fluid to allow for shifting priorities
2. TdP' s marketing and technology resources work together to co-create our digital technology roadmap
3. TdP has a flexible, iterative and collaborative approach to technology development
4. TdP leverages modern architectures (API's, Cloud services...) to promote speed and flexibility
5. TdP measures our technology teams by business outcomes not just systems up-time
6. TdP uses customer experience asset, like personas and journey maps, to steer our technology design
7. TdP uses digital tools to promote employee innovation, collaboration and mobility

iv. Insights

1. At TdP we have clear and quantifiable goals for measuring the success of our digital strategy

2. At TdP every employee understands how their performance ties to corporate digital goals
3. At TdP we use customer centric metrics (Net Promoter Score, Lifetime value...) to promote success
4. At TdP we measure how channels work together to accomplish a desired outcome
5. At TdP customer/traveler's insights actively steer our digital strategy
6. At TdP customer insights inform digital design and development
7. At TdP we feed lessons learned from digital programs back into our strategy

VIII. Other

- a. [Y/N] Do you think you could do a better job in a more digital workplace?
- b. [OPEN QUESTION - not mandatory] Is there any action you would like to propose TdP for implementing, regarding digitalization?
- c. [OPEN QUESTION - not mandatory] - Any recommendations you may have or problems you would like us to know about?

Appendix 3 – Worldwide Travel & Tourism key facts

Source: World 2017 Annual Research Key Facts (World Travel & Tourism Council, 2017).

2017 FORECAST

GDP: DIRECT CONTRIBUTION

The direct contribution of Travel & Tourism to GDP was USD2,306.0bn (3.1% of total GDP) in 2016, and is forecast to rise by 3.8% in 2017, and to rise by 4.0% pa, from 2017-2027, to USD3,537.1bn (3.5% of total GDP) in 2027.



GDP: TOTAL CONTRIBUTION

The total contribution of Travel & Tourism to GDP was USD7,613.3bn (10.2% of GDP) in 2016, and is forecast to rise by 3.6% in 2017, and to rise by 3.9% pa to USD11,512.9bn (11.4% of GDP) in 2027.



EMPLOYMENT: DIRECT CONTRIBUTION

In 2016 Travel & Tourism directly supported 108,741,000 jobs (3.6% of total employment). This is expected to rise by 2.1% in 2017 and rise by 2.2% pa to 138,086,000 jobs (4.0% of total employment) in 2027.



EMPLOYMENT: TOTAL CONTRIBUTION

In 2016, the total contribution of Travel & Tourism to employment, including jobs indirectly supported by the industry, was 9.6% of total employment (292,220,000 jobs). This is expected to rise by 1.9% in 2017 to 297,896,000 jobs and rise by 2.5% pa to 381,700,000 jobs in 2027 (11.1% of total).



VISITOR EXPORTS

Visitor exports generated USD1,401.5bn (6.6% of total exports) in 2016. This is forecast to grow by 4.5% in 2017, and grow by 4.3% pa, from 2017-2027, to USD2,221.0bn in 2027 (7.2% of total).

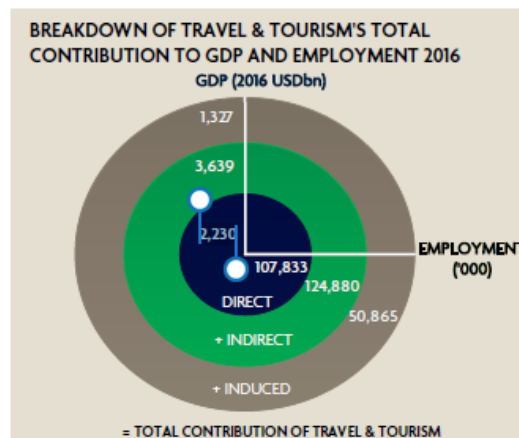
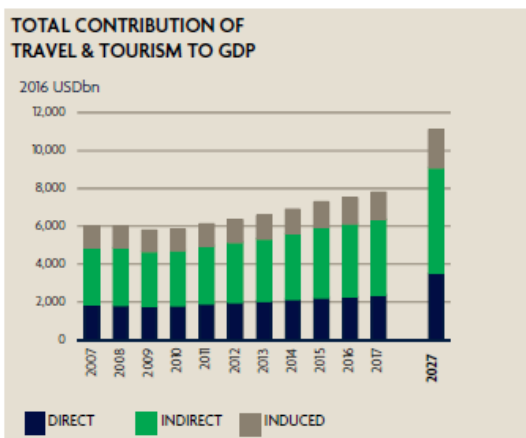


INVESTMENT

Travel & Tourism investment in 2016 was USD806.5bn, or 4.4% of total investment. It should rise by 4.1% in 2017, and rise by 4.5% pa over the next ten years to USD1,307.1bn in 2027 (5.0% of total).



¹All values are in constant 2016 prices & exchange rates



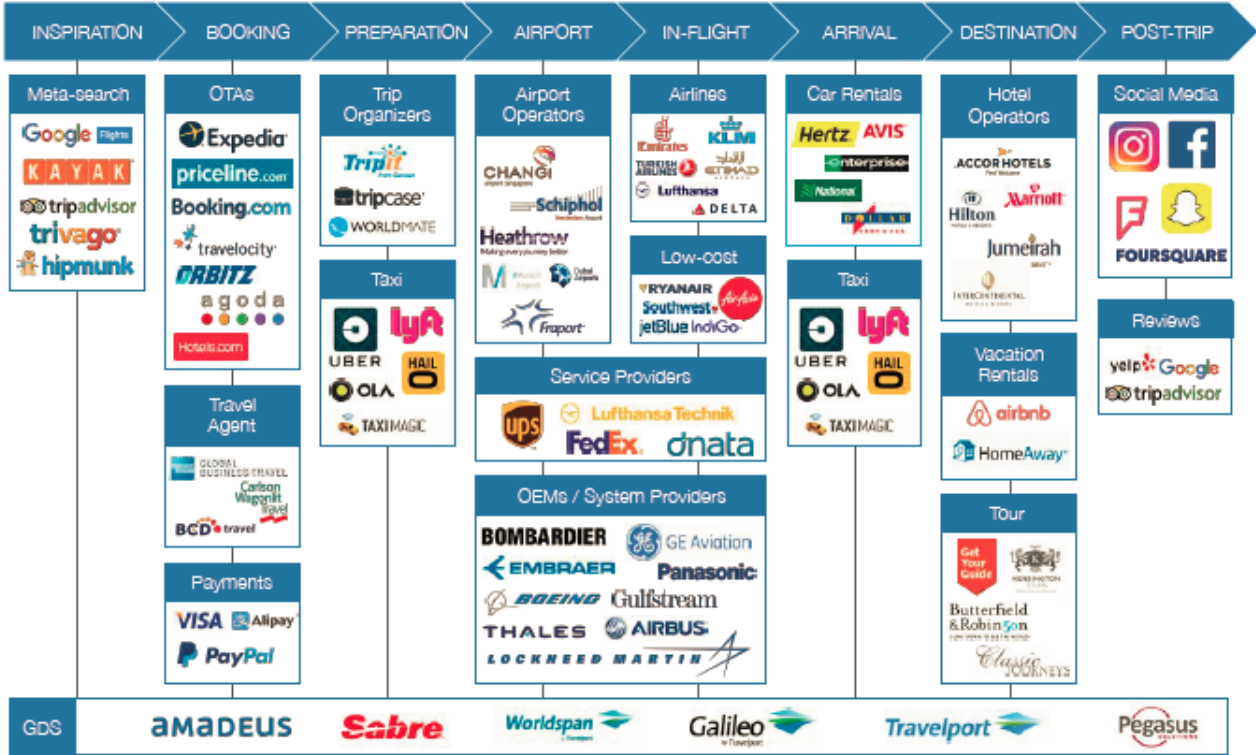
Appendix 4 – Aviation, Travel and Tourism Brand Ecosystem

A brand travel, aviation and tourism ecosystem may be viewed below, considering key players and how the ecosystem is being shaped through several players (World Economic Forum, in collaboration with Accenture, 2017).

The aviation, travel and tourism industry has been at the forefront of digital innovation, but industry and technology trends suggest that further change lies ahead. The sector has been an early adopter of digital technologies and platforms, but steep demand for travel, driven by a growing middle class in emerging markets and the increasing importance of digital experiences, implies that further digitalization will be vital if the expectations of tomorrow's consumers are to be met.

The travel ecosystem (see Figure 1) has helped shape customer expectations for on-demand and convenient services through digital innovation, both within and across industry boundaries. The next step is for organizations that are lagging behind to change how they work, so that they too can capture the opportunities that digital transformation presents.

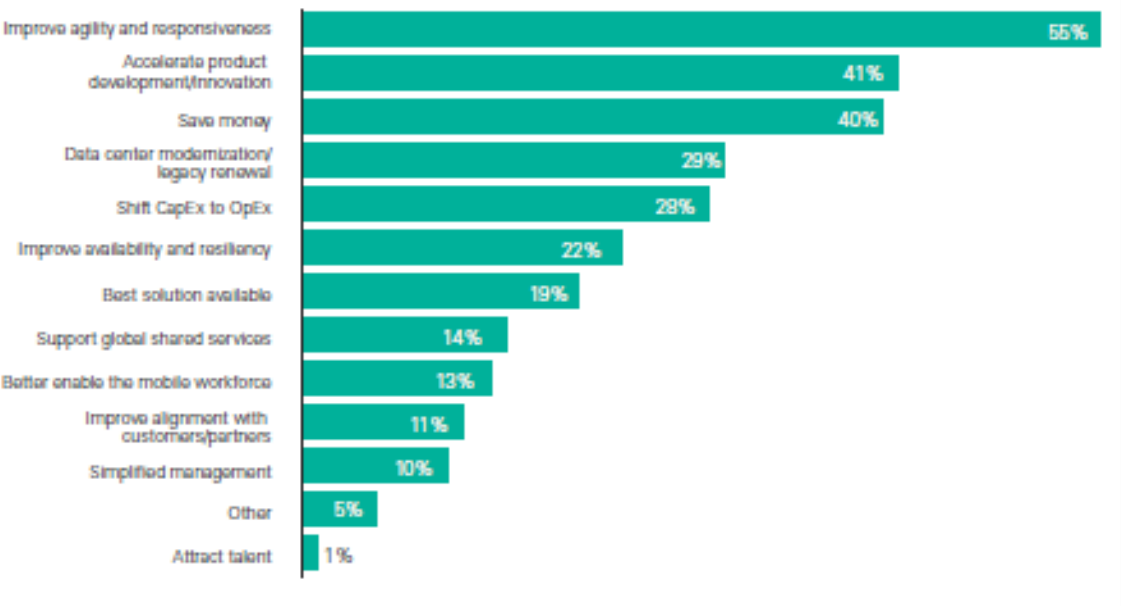
Figure 1: The Aviation, Travel and Tourism Ecosystem



Source: World Economic Forum/Accenture analysis

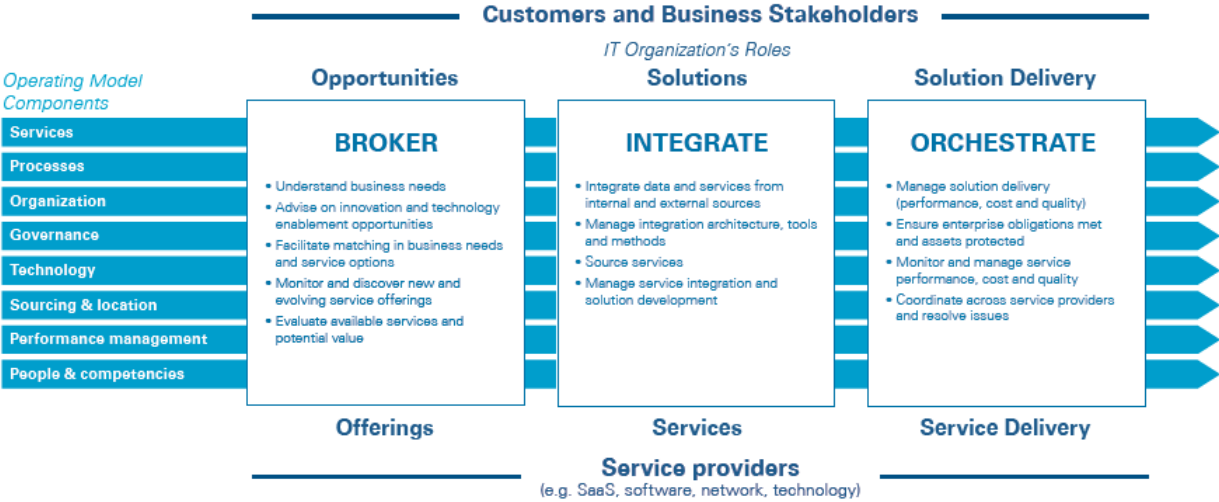
Appendix 5 –Reasons for using Cloud Technology

Below the top reasons for using cloud technology (KPMG, 2016).



Appendix 6 – Next Generation IT Operating Model

Next generation IT operating model considering roles, service providers and key stakeholders to the business model. Should be reviewed according to the specific realities to TdP regarding technology adoption and legacy systems. All in all, business and IT need to be engaged to provide a digital disruption and attain win-win relationships – IT should not be a blocker, but an enabler (KPMG, 2016).



¹⁸ For more information, see the report Next-gen IT Operating Model, KPMG Institutes, <http://www.kpmg-institutes.com/institutes/advisory-institute/articles/2014/01/next-generation-it-operating-models.html>

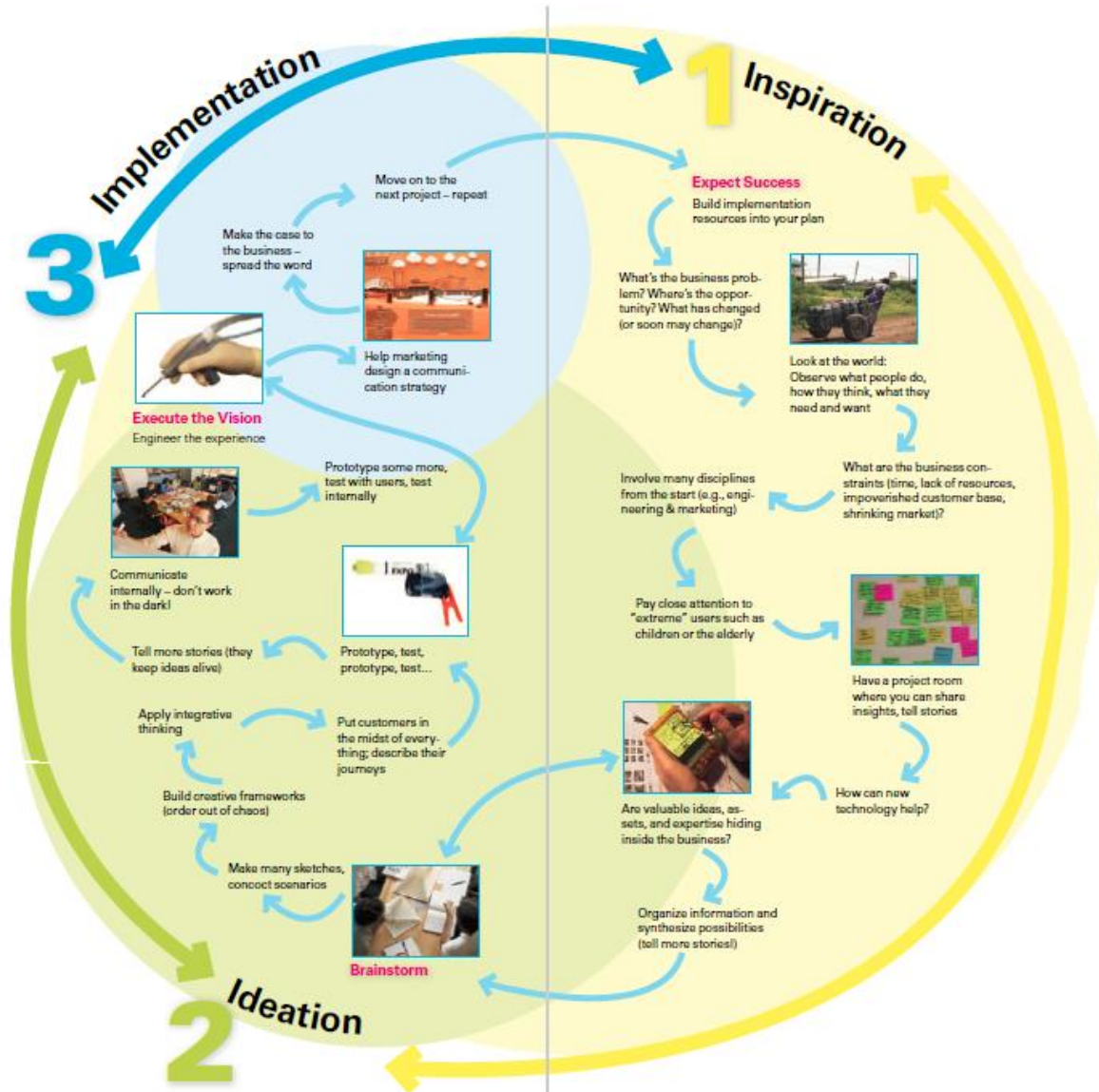
Appendix 7 – Charting Digital Transformation

Different maturity realities impact the company’s stages when it comes to digital transformation (Kane G. , Palmer, Phillips, Kiron, & Buckley, 2015). The difference between a digital mature and early mature company has more to with business fundamentals rather than technology itself, being the most mature more committed to DT and to take, and learn from, risks.

| | EARLY | DEVELOPING | MATURING |
|---------------------------|---|---|--|
| Barriers | <i>Lack of strategy</i> More than half cite “lack of strategy” as a top-three barrier | <i>Managing distractions</i> Nearly half indicate “too many competing priorities” is a top-three barrier, “lack of strategy” still a challenge for one-third | <i>Security focus</i> Nearly 30% cite security as a top-three barrier; managing too many competing priorities remains a top concern for 38% |
| Strategy | <i>Customer and productivity driven</i> Approximately 80% cite focus on customer experience (CX) and efficiency growth | <i>Growing vision</i> CX and efficiency growth; over 70% cite focus on transformation, innovation and decision making | <i>Transformative vision</i> Over 87% cite focus on transformation, innovation and decision making |
| Culture | <i>Siloed</i> 34% collaborative; 26% innovative compared to competitors | <i>Integrating</i> 57% collaborative; 54% innovative compared to competitors | <i>Integrated and innovative</i> 81% collaborative; 83% innovative compared to competitors |
| Talent Development | <i>Tepid interest</i> 19% say their company provides resources to obtain digital skills | <i>Investing</i> 43% say their company provides resources to obtain digital skills | <i>Committed</i> 76% say their company provides resources to obtain digital skills |
| Leadership | <i>Lacking skills</i> 15% say leadership has sufficient digital skills | <i>Learning</i> 39% say leadership has sufficient digital skills | <i>Sophisticated</i> 76% say leadership has sufficient digital skills |

Appendix 8 – Design Thinking Workshop Roadmap

Simplified roadmap for a design thinking workshop (Brown, 2008).

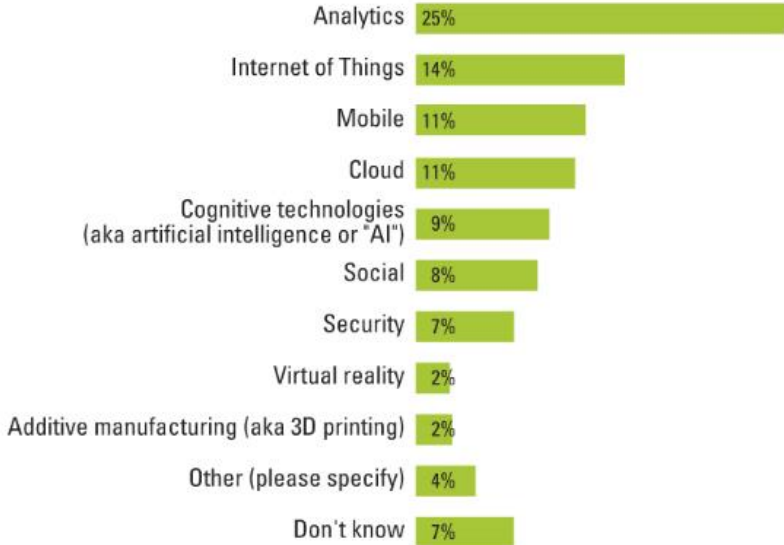


Appendix 9 – Skills for DT

Below the most important skills for an organizational leader to succeed in a digital workplace and which technologies will be the most important in an organization in the next 3 to 5 years (MIT, 2017).



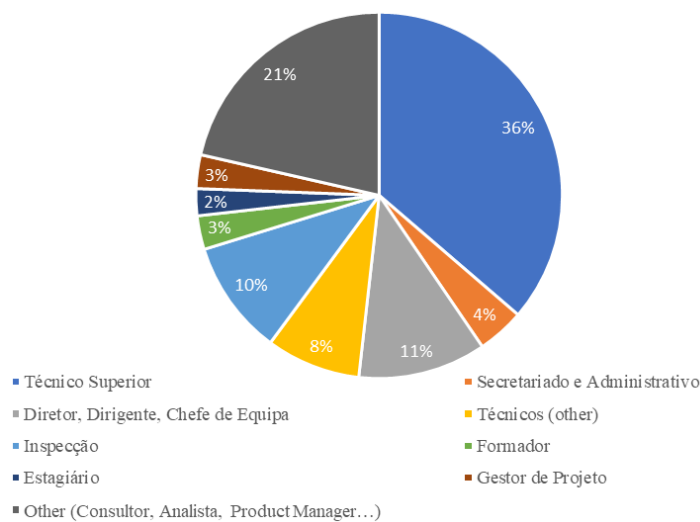
Which of the following specific technologies will be the most important to your organization in the next 3 to 5 years?



Appendix 10 – Graphical Analysis of the Survey

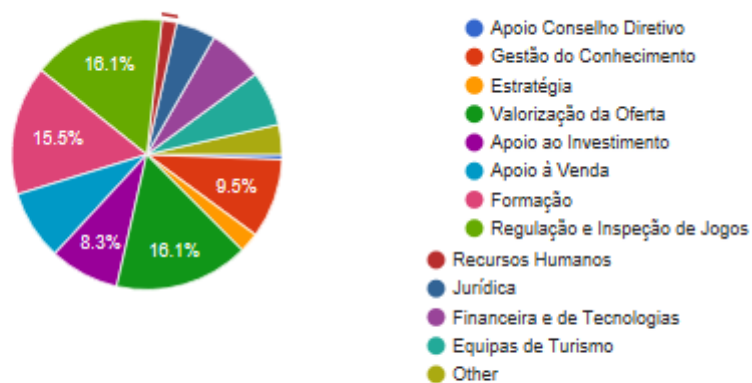
Below the survey’s responses (survey was sent in Portuguese as asked by TdP), with most of the graphs extracted from Google Survey directly, and some of them done with Excel since the question was open. Moreover, tables presenting a brief qualitative analysis of some open questions (plus direct quotes) are also present with specific comments directly from the respondents.

I.1 Qual é a sua função atual no TdP?



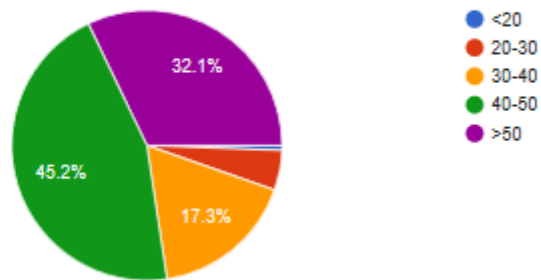
I.2 Que área funcional melhor se adapta à sua função atual?

168 responses



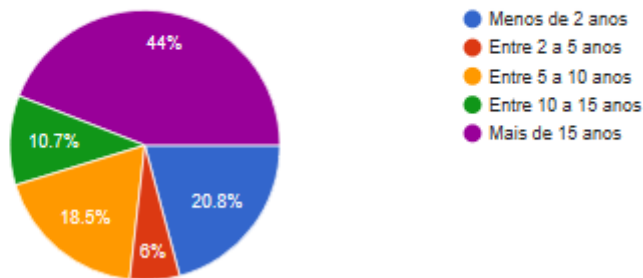
I.3 Em qual das seguintes faixas etárias se enquadra?

168 responses



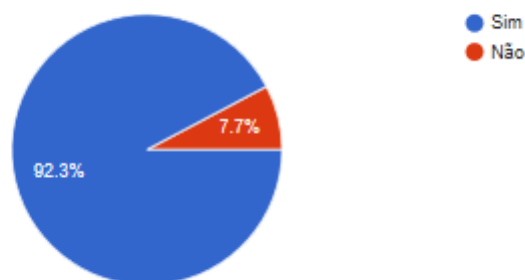
I.4 Há quantos anos trabalha para o TdP?

168 responses



I.5 Sente-se parte da organização?

168 responses



Part II regarded problems in TdP and, because the first question asked for an open response, a table describing four main problems identified, with direct quotes from the survey, is presented

below. Since some comments grouped several problems and are worth mentioning in the present direct research project, a section with “Other” has also been added as well.

| Problem Field | Description | Direct quote from the survey |
|-------------------------------------|---|---|
| Communication | 30 respondents clearly identified communication as a problem, mostly between departments and employees. | <ul style="list-style-type: none"> • Falta de comunicação interna, planeamento, capacidade de visão abrangente, reflexão sobre questões estruturais, transparência de decisões. Precipitação na tomada de decisões • Ausência de comunicação interdepartamental • Deficiente clareza na afetação de tarefas e/ou responsabilidades • Não existem muito conhecimento do trabalho feito pelas diferentes áreas, sobretudo as áreas de negócio e por vezes as áreas transversais poderiam dar um apoio mais consistente aos departamentos da área de negócio |
| Processes & Organization | 17 respondents stated that, among others, bureaucracy and too many processes were a hinder on their daily routines. | <ul style="list-style-type: none"> • Ausência de procedimentos claros • Burocracia e aversão à mudança • Problemas Inerentes com a Burocracia de processos de contratação, tratamento da informação direta, tempo adequado da resposta de inúmeros pedidos, falta de informação, falta de planeamento estratégico nalguns casos • A existência de processos internos que poderiam ser tratados de forma mais eficaz |
| HR | 26 respondents mentioned HR as a problem, namely regarding hiring (due to public policies), | <ul style="list-style-type: none"> • Falta de maior intervenção RH's no desenvolvimento de carreiras dentro do TdP. Diferenças salariais no subsídio de almoço entre funcionários do mesmo departamento. • Problemas na integração de dados no sistema (SGPI e MGC) • Não (re)qualificação do Recursos Humanos |

| | | |
|-----------|---|---|
| | benefits, trainings, lack of skills, meritocracy, etc. | <ul style="list-style-type: none"> • Os próprios da contratação pública (demasiadas regras e burocracia) • Impossibilidade de reconhecimento e promoção de meritocracia nas equipas • Existência de muitos departamentos e dificuldade de contratação de recursos humanos • Formação |
| IT | 23 respondents identified IT (siloe apps, outdated informatic material, no integration of data and systems...) as problems within TdP | <ul style="list-style-type: none"> • Falta de capacidade no disco, pouca rapidez no uso da internet e pouca capacidade para receber ficheiros. Há uma situação que considero grave, por exemplo o mesmo empreendimento tem número diferente de processo conforme o departamento. Acho que o empreendimento X só deveria ter um único nº de processo dentro da organização de forma a poder ser consultado por todos e que todos pudessem ter acesso à história do mesmo através de um click • Sistemas de Gestão e de Informação pouco integrados entre si; Necessidade de melhoria das ferramentas de gestão e controlo de atividade • Falta de interligação entre ferramentas informáticas; alguns procedimentos (poucos)feitos manualmente, falta de capacidade no acompanhamento de evolução necessária das ferramentas, decorrente das constantes alterações legislativas • Demasiados programas informáticos, e nenhum funciona em condições. Alterações sucessivas nos programas, sem terem atenção a melhoria |

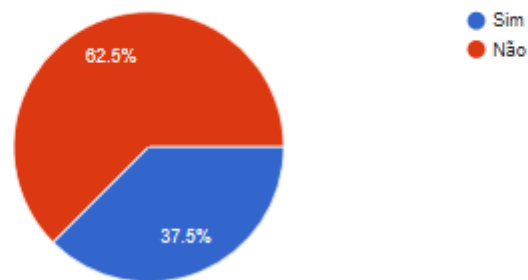
| | | |
|--------------------------------|---|--|
| | | <ul style="list-style-type: none"> • Excessivo formato analógico, falta de interligação entre os diversos serviços |
| Other relevant comments | <p>Lack of management, poor or no delegation, different realities with different unaddressed needs, organizational complexity, lack of internal information, change management, reduced budget and adaptation to new realities were also present in some of the comments.</p> | <ul style="list-style-type: none"> • Centralismo exagerado, peso acentuado da sede face a outras estruturas do TdP, desconhecimento da realidade fora da sede • Falta orientação e coordenação por parte das chefias do trabalho a executar • Sensibilidade para reconhecer o trabalho que se faz com a Formação nas Escolas. Não há de parte da sede, sensibilidade técnica capaz de compreender que as Escolas de Hotelaria são um universo totalmente diferente dum organismo que promove o Turismo em Portugal, mas esquecem por completo a Formação, os seus monitores e formadores os seus técnicos de formação. Esquecem as necessidades destas pessoas que dão a cara pelo ensino técnico-profissional. Esquecem que as Escolas, trabalham no dia a dia com matéria prima alimentar, com a aquisição de diversos itens para a formação. As pessoas da sede, não sabem o que se faz nas escolas, as suas necessidades, que são totalmente diferentes da do organismo em si. O organismo esquece por completo os vencimentos e as necessidades dos monitores e pensam que estes, são empregados de mesa ou cozinheiros... • 1- Complexidade dos procedimentos de suporte à aquisição de serviços; 2- Falta de apoio e morosidade de resposta das áreas transversais; 3- Défice de informação interna sobre algumas áreas, como por exemplo |

| | | |
|--|--|---|
| | | <p>informações sobre decisões e opções orçamentais; 4- Dificuldade de resolução dos diversos problemas de RH afetos às escolas de hotelaria 5- Défice de relacionamento interdepartamental (sobretudo entre as escolas e os restantes departamentos da sede) 6- Falta de um sistema de avaliação funcional eficiente, com a existência de prémios e benefícios (não pecuniários) 7- Necessidades de investimento em infraestruturas e equipamentos 8- Necessidades de investimento em softwares de apoio à formação</p> <ul style="list-style-type: none"> • O TP tem 10 anos de existência e resulta da fusão de 4 organismos com diferentes culturas organizacionais bem definidas. A adaptação/aceitação de novas estratégias, valores, práticas, funções, crenças, logística, etc. é sempre um processo difícil de gerir quer a nível global quer individual e nem sempre foi bem gerido. O TP tem vindo a melhorar num esforço que é de todos, mas tem ainda um longo caminho a percorrer. Estamos ainda na fase de formação de uma cultura organizacional e seria injusto para todos apontar ou omitir problemas |
|--|--|---|

Table 2 - Problems in TdP - question II.1

II.2 Considera ter os recursos disponíveis para solucionar ou agilizar os problemas que levantou na questão anterior?

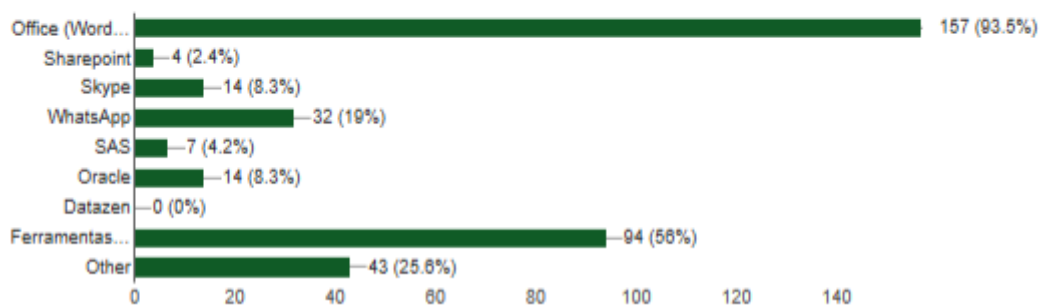
168 responses



III. Ferramentas

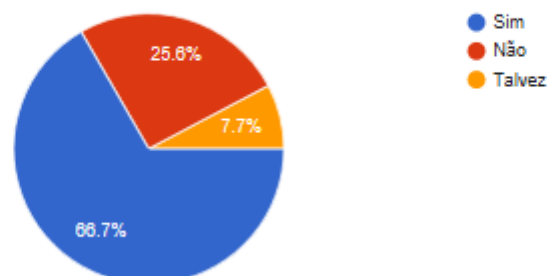
III.1 Que ferramentas mais utiliza no seu dia-a-dia?

168 responses



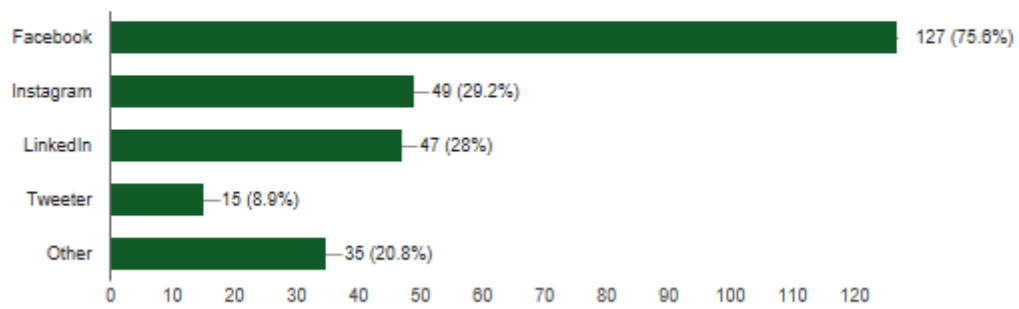
III.2 Já teve formação para as ferramentas que utiliza no dia-a-dia?

168 responses



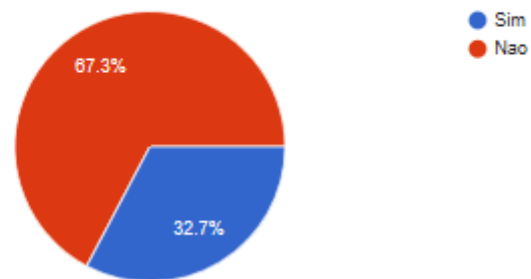
III.3 Que redes sociais utiliza (pelo menos uma vez por semana)?

168 responses



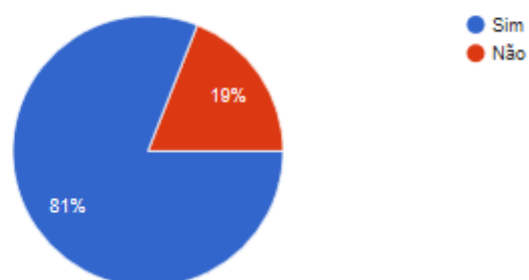
III.4 Possui um telefone da empresa?

168 responses



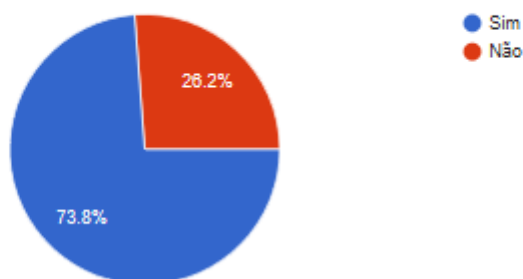
III.5 Possui um computador portátil da empresa?

168 responses



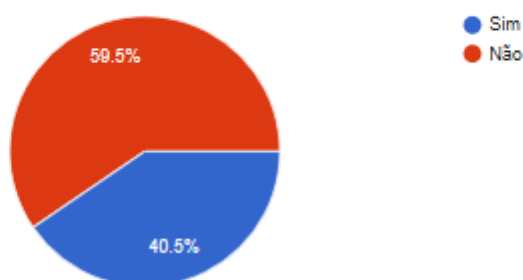
III.6 Tem a possibilidade de trabalhar remotamente ou fora do seu local de trabalho habitual (residência...)?

168 responses



III.7 No seu dia-a-dia, usa ferramentas não corporativas (WhatsApp, Facebook Messenger...) para fins de trabalho?

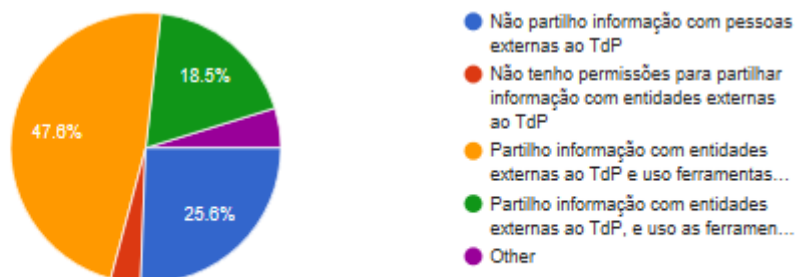
168 responses



IV. Processos

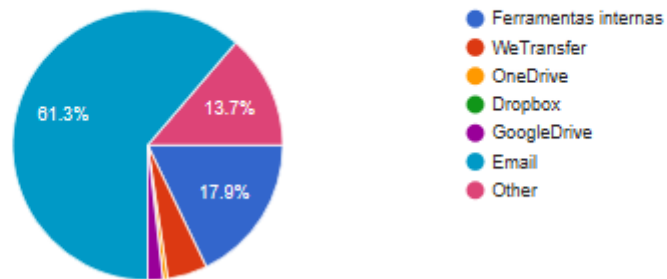
IV.1 Qual dos seguintes cenários melhor descreve a sua situação atual?

168 responses



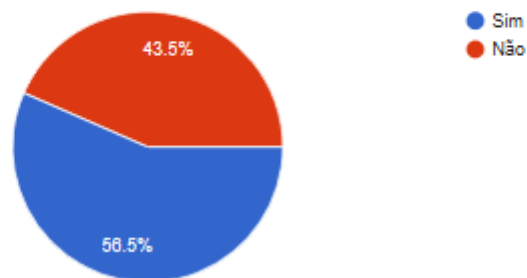
IV.2 Como partilha dados/informação com entidades externas ao Turismo de Portugal?

168 responses



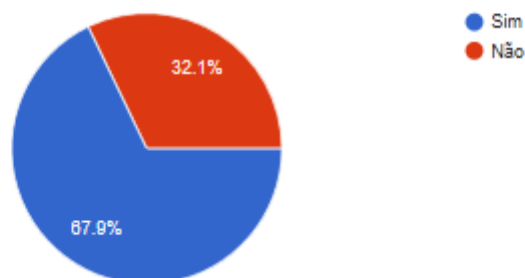
IV.3 Sente que o Turismo de Portugal possui processos internos eficazes e eficientes?

168 responses



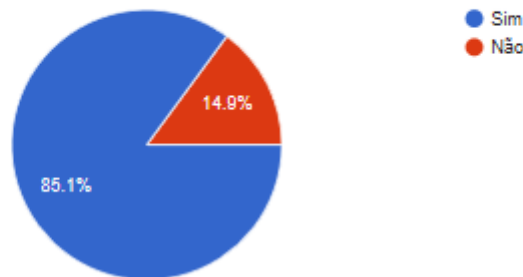
IV.4 Sente que perde bastante tempo a lidar com detalhes burocráticos diariamente?

168 responses



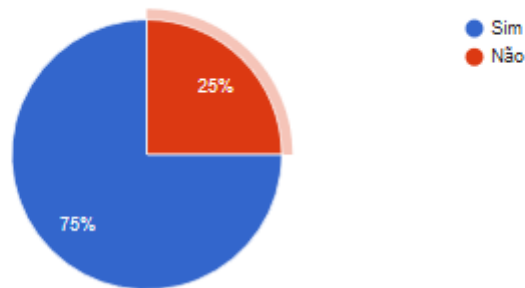
IV.5 Sente que uma automação de processos internos tornaria o seu dia-a-dia mais produtivo?

168 responses



IV.6 Considera que ao trabalhar de forma mais digital, reduziria o seu consumo de papel na organização?

168 responses



Question IV.7 aimed to understand which processes could be optimized through digital transformation. Although some of the answers revealed a clear lack of knowledge (response bias) or discontent, many of the respondents identified HR digitalization, project management, archiving, reporting, etc., as improvement processes. Below a summary of the answers, and some direct quotes.

| | |
|---|---|
| <p>Measures suggested by respondents</p> | <ul style="list-style-type: none"> • DRH (Human Resources Direction) requests • Payment requests • Mailings and internal service documents • HR justifications • Sending proposals • Public hiring • Processing of files |
|---|---|

| | |
|--|--|
| | <ul style="list-style-type: none"> • Subsistence allowance forms • Digital signature, internally and externally • Absence communication • Document archiving • File sharing and conversations (IM, voice...) • Project management • Performance reviews, online tests and qualifications/tests • Applications management and review without paper • Reports on activities (#newsletters sent) • Automatic data integration • Electronic billing • Digital kiosks for brand activations and promotion • Communications and notifications for supplier's payments • Elaboration of statistic reports • Licensing programs and IT applications reviews • Requiring a vehicle and expense submission |
| <p>Direct quotes from the respondents</p> | <ul style="list-style-type: none"> • Dossier de Projeto atualizável nas suas diferentes fases e consultável em formato digital, o formato atual implica abrir dezenas de registos em Q2 (que por vezes nem estão devidamente associados ao projeto) ou ir consultar o dossier em papel. • Adesão a ferramentas de CAD para visualização/tratamento de informação de plantas de arquitetura e engenharia • Pedidos do próprio para proibição de acesso aos casinos, se preenchidos pelo próprio digitalmente e documentalmente confirmados (via autenticação.gov.pt), na pagina do SRIJ • Análise de candidaturas Linha Valorizar. Considero desnecessária a impressão das candidaturas em análise. • Registo documental - Exportação das ferramentas PT2020 para Q2 • Análise candidaturas SGPI • Informação do TdP (software do centro de documentação |

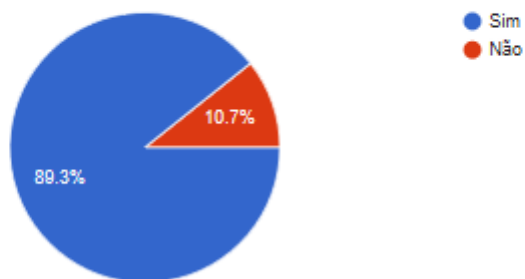
| | |
|--|--|
| | <p>disseminado pelas bibliotecas escolares)</p> <ul style="list-style-type: none"> • Preparação de listas com informação sobre apoios concedidos em todo o território (necessária automatização e integração das diversas bases de dados) |
|--|--|

Table 3 - Which processes could be optimized with DT in TdP, question IV.7

V. Dados

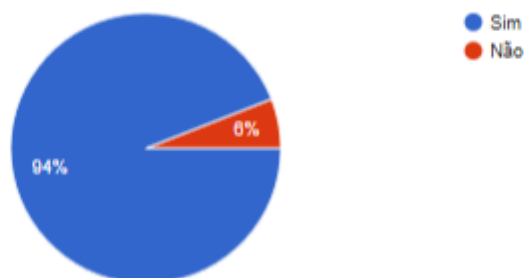
V.1 Tem acesso a dados/informação quando necessita?

168 responses



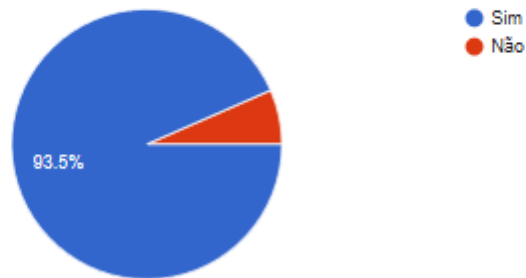
V.2 Tem permissão para utilizar os dados/informação internamente?

168 responses



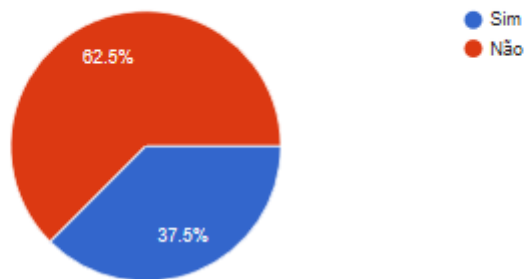
V.3 Sabe onde encontrar os dados/informação relevantes para o seu trabalho?

168 responses



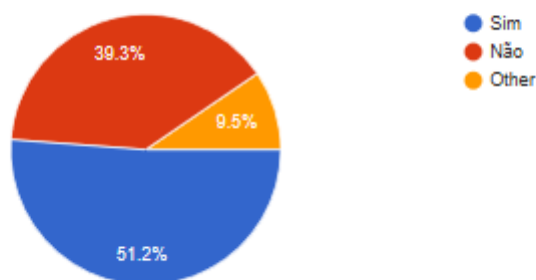
V.4 Ao recorrer a dados providenciados pela organização, sente que são complexos de utilizar e analisar?

168 responses



V.5 Consegue aceder a dados/informação interna fora do seu local habitual de trabalho?

168 responses



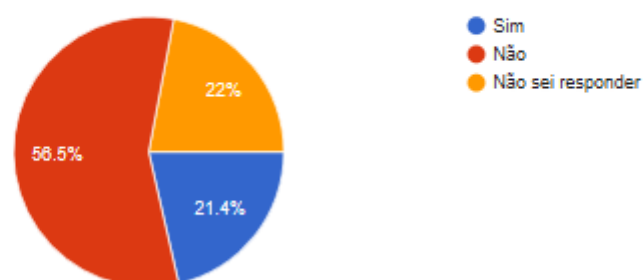
V.6 Precisa de trabalhar a informação/dados para utilizar no seu trabalho, ou os dados já estão prontos a utilizar/visualizar?

168 responses



V.7 Considera que os dados/informação da organização estão integrados entre si?

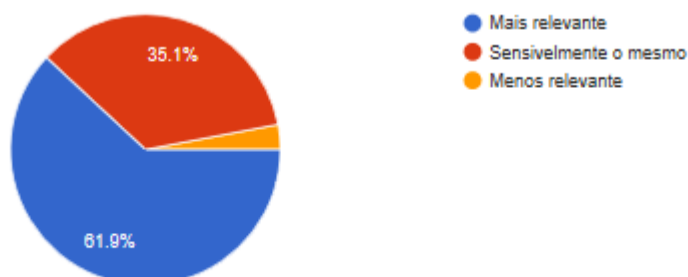
168 responses



VI. Digitalização

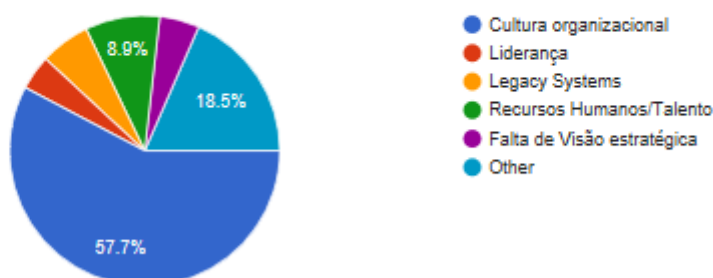
VI.1 Considera que as novas tecnologias e digitalização estão a assumir um papel mais ou menos relevante no TdP?

168 responses



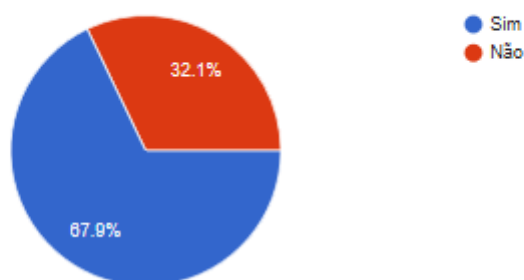
VI.2 Identifique aquela que considera a maior barreira para a transformação digital no TdP:

168 responses



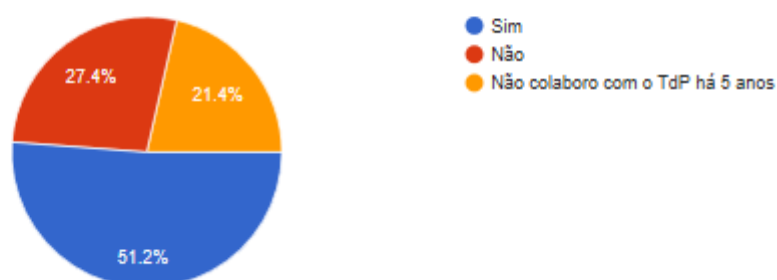
VI.3 Considera que o TdP lidera a componente de inovação quando comparado com outras instituições do setor público?

168 responses



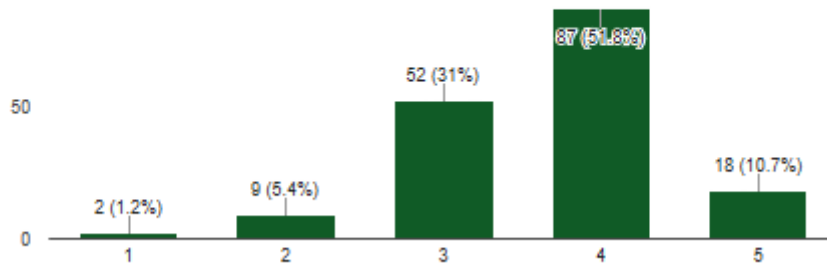
VI.4 Considera que a sua forma de trabalhar (processos, ferramentas...) mudou nos últimos 5 anos?

168 responses



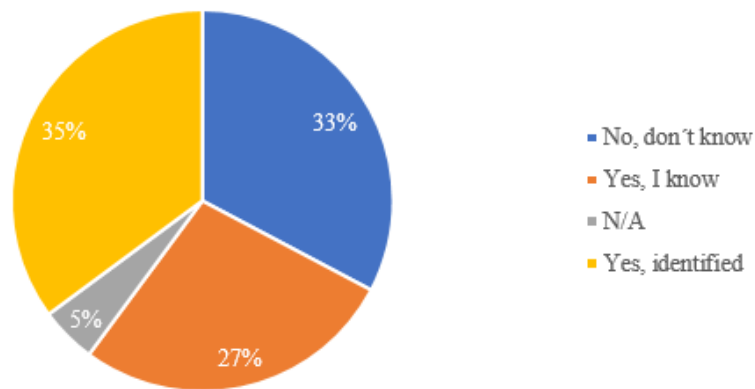
VI.5 Avalie qual considera ser o seu nível de maturidade digital de 1 a 5:

168 responses

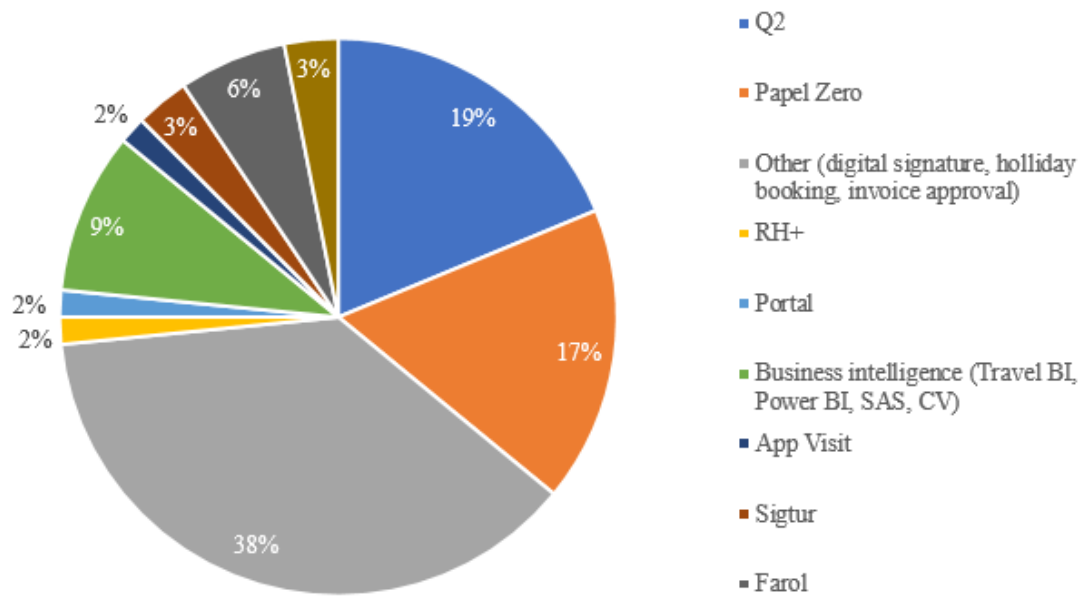


VI.6 Are you aware of DT processes in TdP? Identify

Are you aware of any DT Processes in TdP?

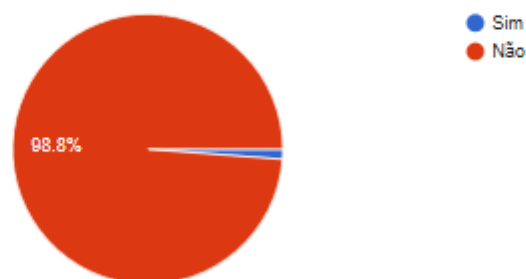


DT/Digitalization process identified



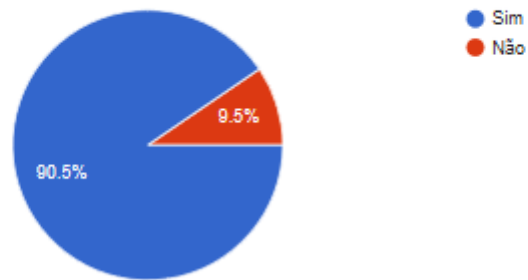
VI.7 Considera que a sua posição está em risco devido à digitalização e transformação digital no TdP?

168 responses

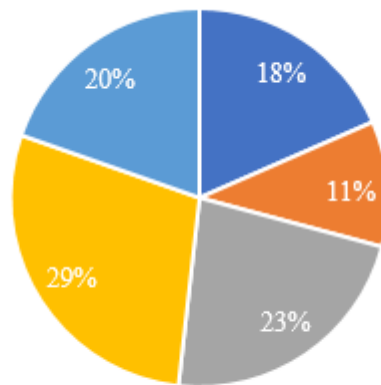


VI.8 Considera que a sua chefia directa apoia a transformação digital no TdP?

168 responses



VI.9 How does TdP management promote DT?



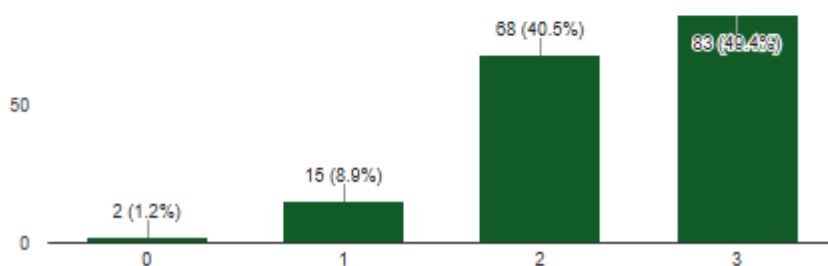
■ Don't know ■ No promotion is done ■ Tools ■ Processes ■ N/A

Matriz de Maturidade Digital

i. Cultura

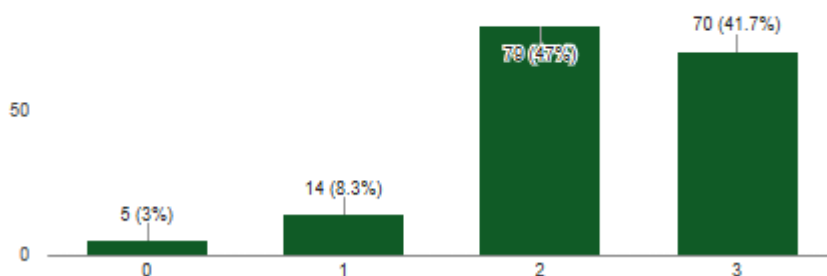
1. No TdP acreditamos que a nossa estratégia competitiva depende de meios digitais

168 responses



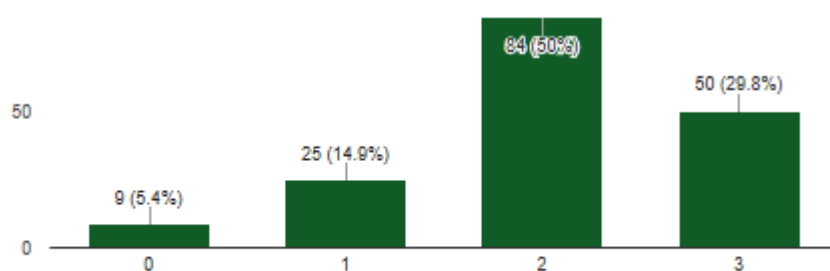
2. A direção e executivos do TdP apoiam a transformação digital

168 responses



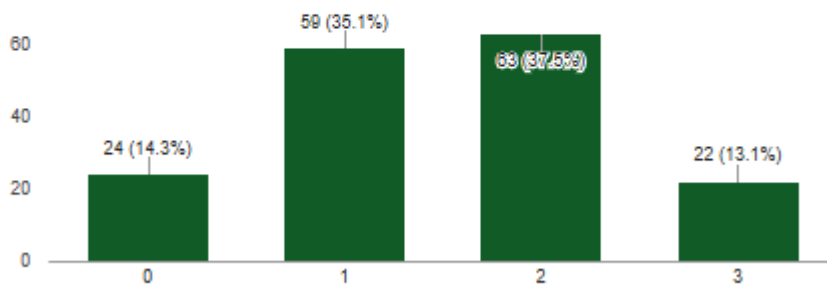
3. No TdP contamos com a liderança certa para executar a nossa estratégia digital no dia-a-dia

168 responses



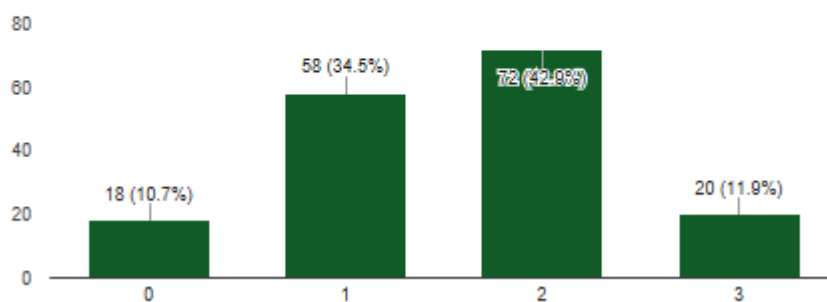
4. No TdP investimos em educação digital e formação para todos os níveis da organização

168 responses



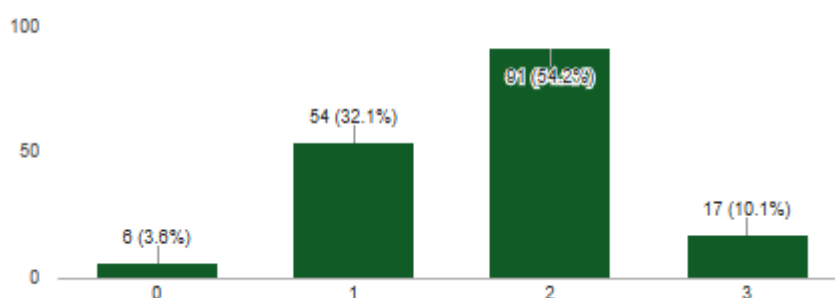
5. No TdP comunicamos com clareza a nossa estratégia digital, quer a nível interno como externo

168 responses



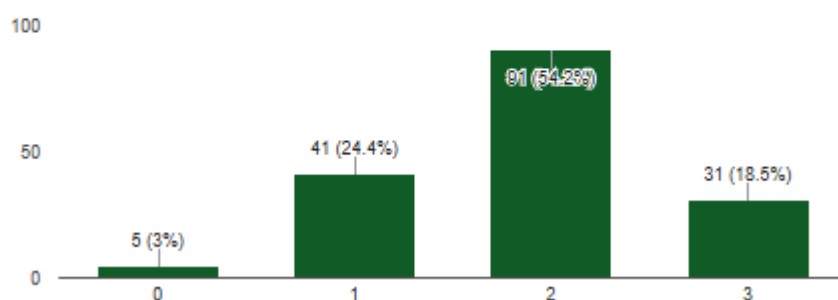
6. No TdP tomamos riscos calculados de forma a permitir a inovação

168 responses



7. No TdP priorizamos a experiência do consumidor/turista em detrimento da performance de qualquer canal individual

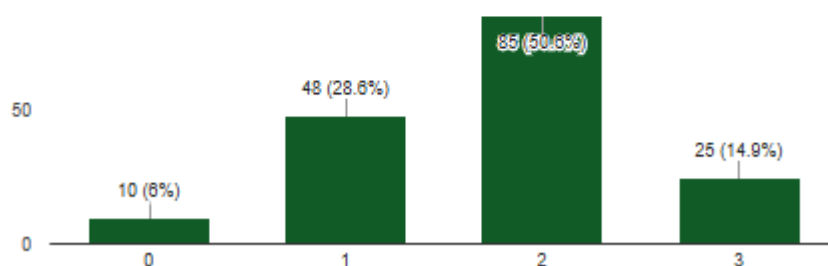
168 responses



ii. Organização

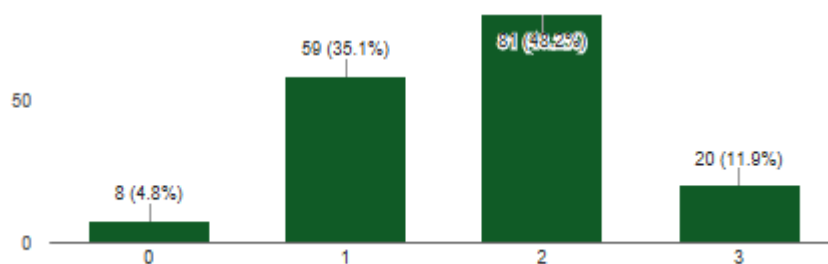
1. A organização do TdP prioriza a "customer journey" do turista em detrimento de silos funcionais

168 responses



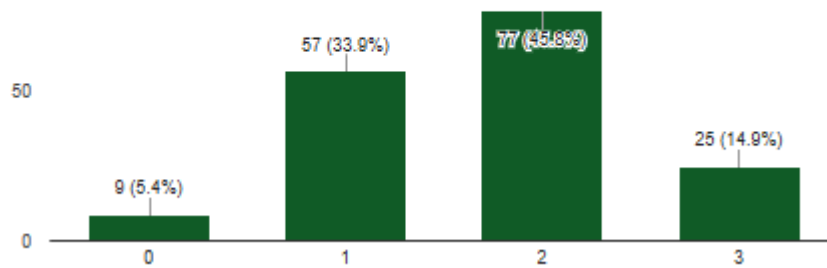
2. No TdP dedicamos recursos apropriados para a nossa estratégia digital, processos de governance e execução

168 responses



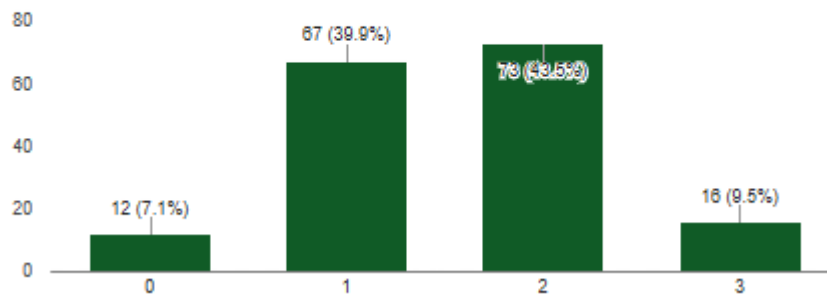
3. O staff que suporta as nossas funções digitais críticas são excecionais

168 responses



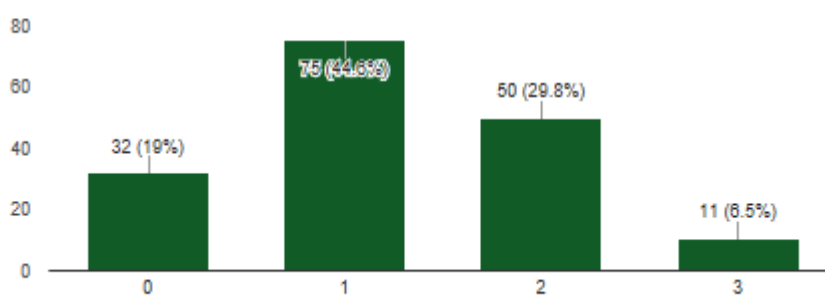
4. No TdP nós temos competências digitais distribuídas, e embebidas, por toda a organização

168 responses



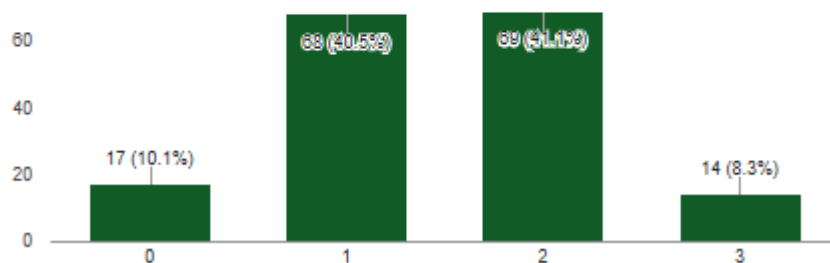
5. O modelo de estrutura organizacional do TdP' s encoraja a colaboração inter-departamental

168 responses



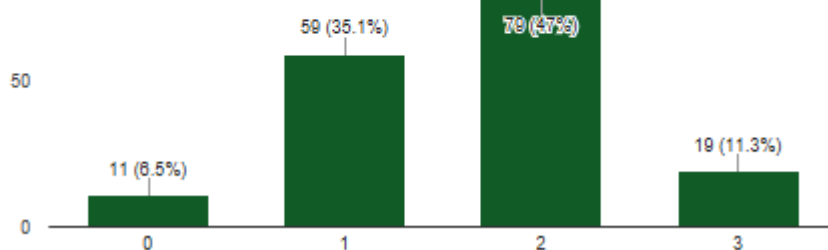
6. No TdP temos os processos de gestão de programas digitais definidos e automatizados

168 responses



7. Os parceiros do TdP aportam valor às nossas competências digitais

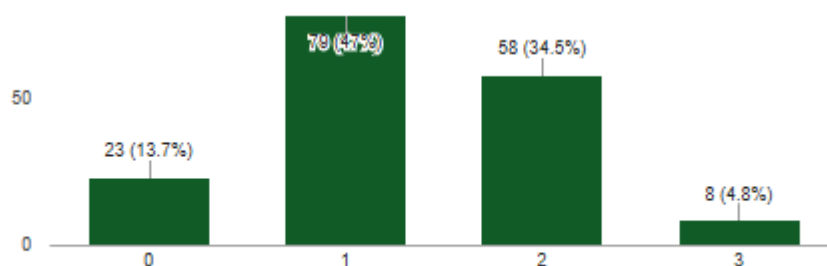
168 responses



iii. Tecnologia

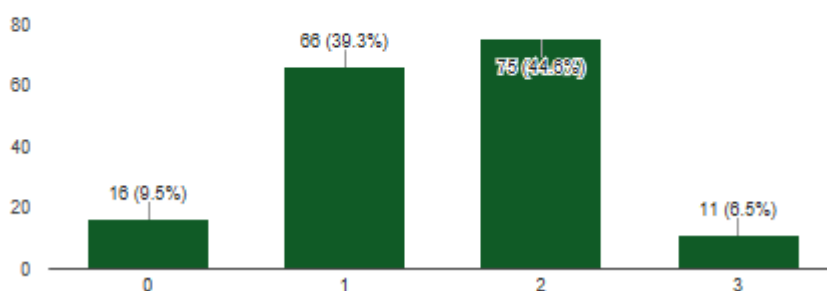
1. O orçamento tecnológico do TdP permite alterações ágeis com a mudança de prioridades estratégicas

168 responses



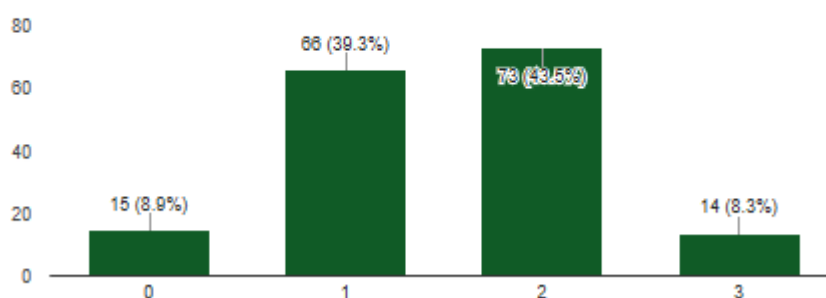
2. Os recursos de marketing e tecnologia doTdP trabalham em conjunto de forma a co-criar o "roadmap" de inovação digital

168 responses



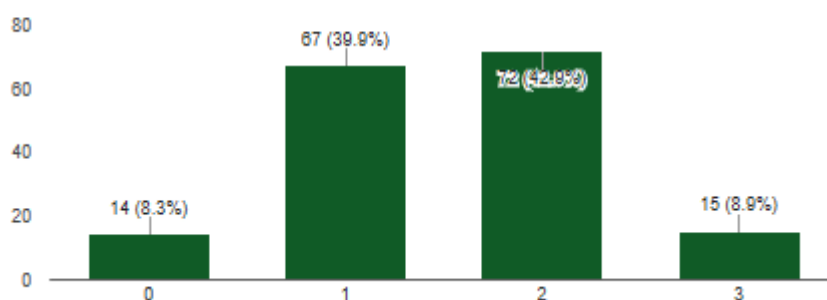
3. O TdP tem uma forma flexível, iterativa e colaborativa de trabalhar no que respeita o desenvolvimento tecnológico

168 responses



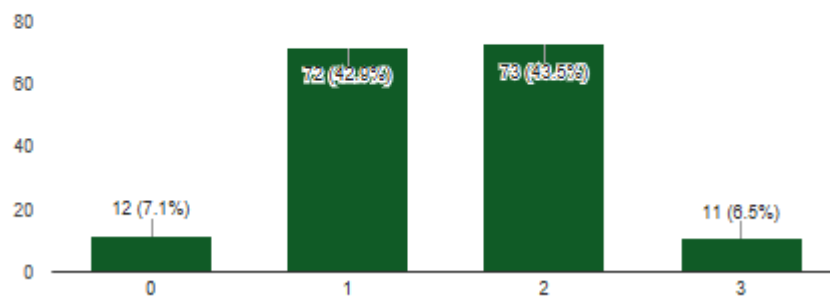
4. O TdP potencia as novas tecnologias (APIs, serviços na cloud) para promover a velocidade e flexibilidade na organização

168 responses



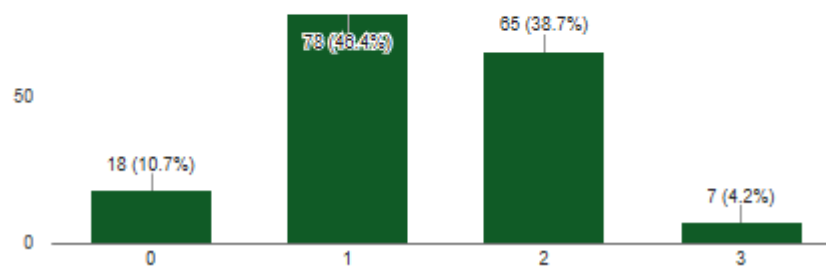
5. O TdP avalia as equipas tecnológicas com base em indicadores de negócio e não apenas funcionamento de sistemas

168 responses



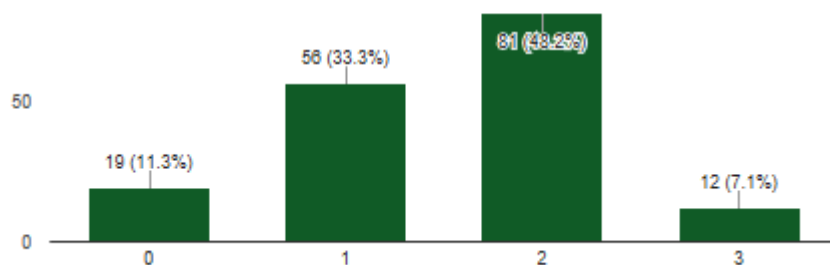
6. O TdP usa recursos de experiência do utilizador, como personagens e journey maps, para implementar o design de inovação tecnológica

168 responses



7. O TdP usa ferramentas digitais para promover a inovação de colaboradores, bem como mobilidade e colaboração dos mesmos

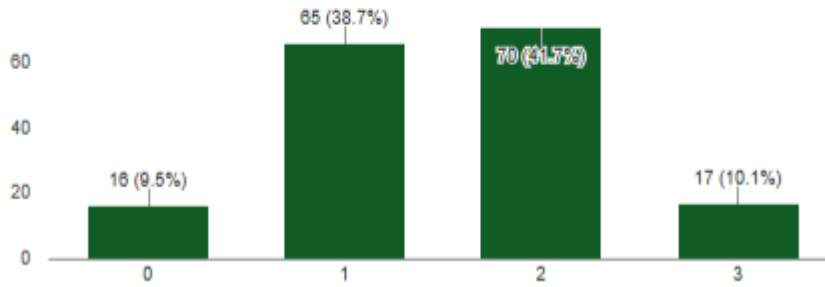
168 responses



iv. Insights

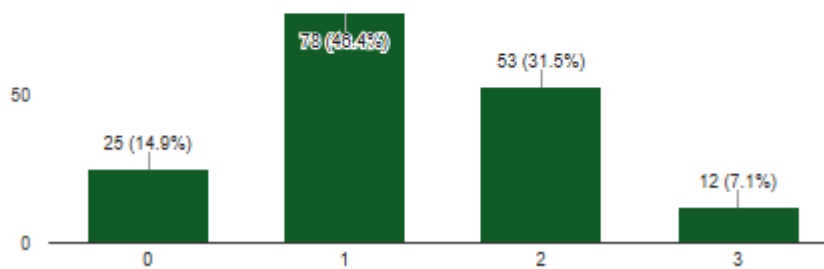
1. No TdP temos uma visão clara e mensurável dos nossos objetivos para o sucesso de uma estratégia digital

168 responses



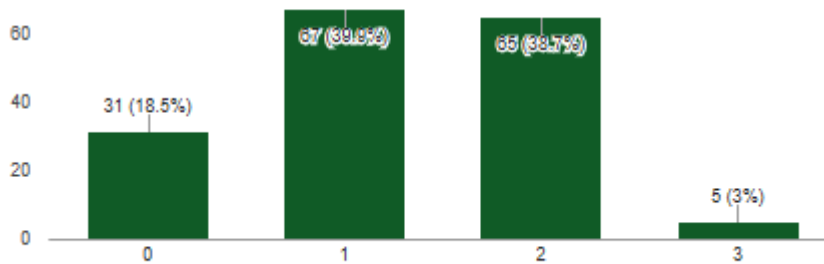
2. No TdP cada colaborador percebe como a sua performance está ligada com os objetivos digitais da organização

168 responses



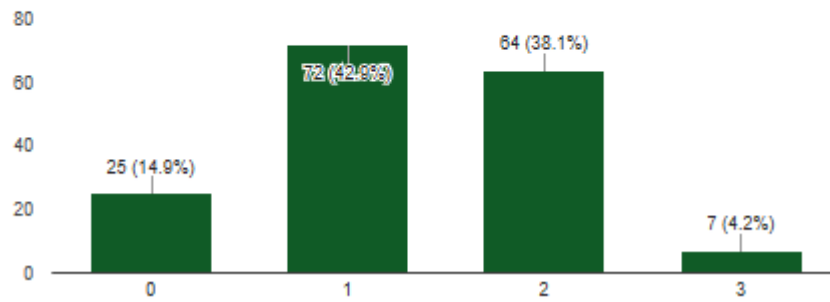
3. No TdP usamos métricas baseadas no utilizador/cliente (Net Promoter Score, Lifetime value...) para promover o sucesso

168 responses



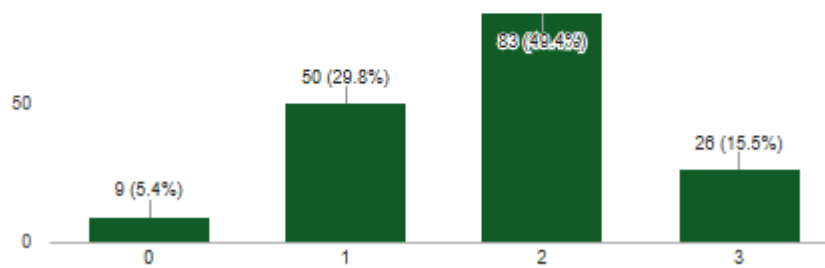
4. No TdP medimos como os diversos canais colaboram em conjunto para atingir um determinado objetivo

168 responses



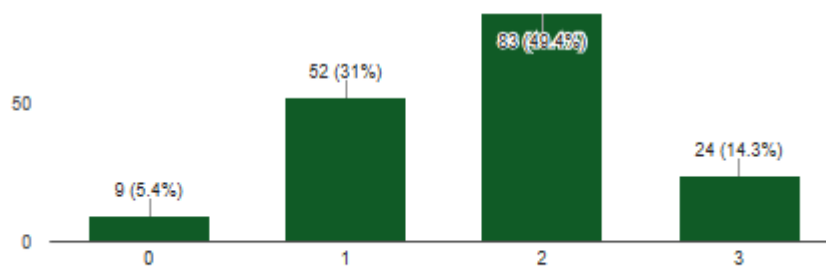
5. No TdP usamos os dados de clientes/turistas para potenciar a nossa estratégia digital

168 responses



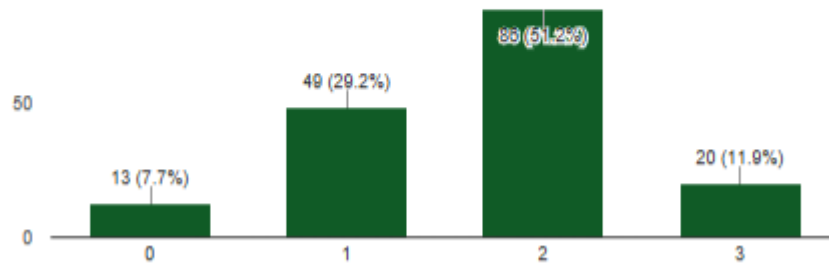
6. No TdP os dados de clientes/turistas são usados para fundamentar o nosso desenvolvimento e design digital

168 responses



7. No TdP utilizamos o feedback dos nossos programas digitais como forma de fundamentar a nossa estratégia

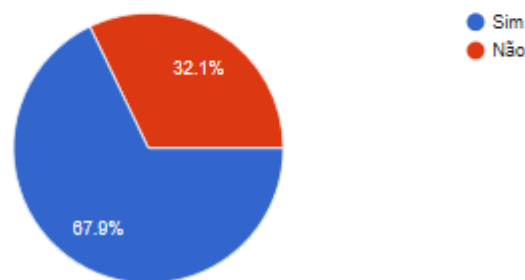
168 responses



Outros

Considera que faria um melhor trabalho, e com melhor desempenho, num local de trabalho mais digital?

168 responses



The last two questions were the only optional ones and a reduction in the number of responses was verified. The first question considered which digital transformation proposals the respondent would like to see implemented in TdP. The answers regarded mainly the following topics: training, good quality hardware, collaborative project management tools, awareness to sharing, better communication, creation of a single database structure, digitalization of archives, corporate cloud, Skype for Business to allow for communication between several organisms, integration of applications and systems. Tables 3 and 4 table consider some direct quotes for this question:

| | |
|--|---|
| <p>Quotes from respondents on proposals they would like to see implemented at TdP</p> | <ul style="list-style-type: none"> • Dossier de Projeto organizado em formato digital • Faturação eletrónica, melhoraria o trabalho de dezenas de colaboradores do TdP • O Cisco Jaber deveria ter a possibilidade de efetuar conversações com várias pessoas em simultâneo. Devia de existir um e-mail de departamento em que os colaboradores tivessem acesso. Deveria existir um meio de partilha de documentos e trabalhos para que, se necessário qualquer um tivesse acesso a essa informação. Os processos do Portugal2020 não deveriam ser obrigatoriamente impressos pois perde-se muito tempo e ainda é um grande consumidor de recursos. A sala de Análise de Investimento deveria ter uma mesa digital para que os engenheiros pudessem visualizar de forma digital as plantas ao invés de se andar sempre a ver tudo em papel. Deveria ser criado um meio para que o TdP pudesse receber documentos que não fosse pelo WeTransfer ou pelo GoogleDrive e similares • Considero que não se deve usar telefones pessoais para uso profissional como muitas vezes a chefia o faz. A isenção de horário tem que vir acompanhada com a evolução salarial, caso contrário devemos restringir-nos ao horário laboral no TdP. • Projeto bibliotecas TdP em rede • Melhor integração dos vários programas (Portal das escolas, Sicgest) • Haver maior comunicação e menor "dispersão" na comunicação dentro do TdP. Terá de haver uma estratégia que identifique o TdP como um todo. Assim, consegue-se poupar em recursos - humanos e financeiros - e mostrar maior identidade do Turismo em Portugal. Não é só o logótipo que tem de "interligar" as várias áreas e competências que o TdP tem, enquanto autoridade turística nacional. Terá de haver uma comunicação - até mesmo do site institucional - que seja de fácil leitura. A informação está toda lá, mas a dispersão e a quantidade de "poluição visual" acaba por desmotivar qualquer pessoa de procurar e/ou encontrar a |
|--|---|

| | |
|--|--|
| | <p>informação que procura. Até para os funcionários, há muitos que não sabem/desconhecem a informação que existe no site do TdP e até, por estranho que pareça, da intranet!</p> <ul style="list-style-type: none"> • Disponibilização de software adequado à criação e envio de newsletters digitais • Possibilidade de interação dos vários negócios do TdP com os seus clientes, com base em documentação digital, mediante autenticação do cliente. Isto é, não somente paginas informativas, mas interativas com o(s) cliente(s) • Implementação de Software de Gestão de Stocks e Vendas integrados • Na intranet: criação de Fórum Temático dos colaboradores, que permita opinarem sobre temas do momento • Digitalização completa dos processos administrativos dos empreendimentos turísticos • Promoção de formação interdepartamental, visando a partilha de conhecimentos e informação e o consequente aperfeiçoamento do trabalho desenvolvido; Criação de base de dados do TdP organizada com clareza, e com acesso global à organização, incluindo toda a informação produzida nos serviços considerada relevante para a prossecução da missão do Instituto; Harmonização de procedimentos administrativos |
|--|--|

Table 4 - Quotes from the respondents on DT in TdP

The last question asked respondents if there was any recommendation or situation they would like TdP to know about. Although some of the answers had already appeared in other prior questions, a lot of comments regarded collaboration as a strategy, IT integration as a means to better business outcomes, training and optimization of the current workforce, a bigger bet on the intranet, evaluation of current processes and functional areas, poor leadership envisioning and, a crucial point in DT, that people, not technology, are the main driver of the organization's strategies.

| | |
|--|---|
| <p>Quotes from respondents on information they would like to share with TdP</p> | <ul style="list-style-type: none"> • Apostar no RH internos e colmatar falhas de RH em algumas especialidades • Atualmente, é difícil trabalhar apenas com suporte digital. Existem muitos documentos que têm de ser obrigatoriamente impressos: sempre a questão das assinaturas, por exemplo... • Divulgação de ações de formação sobre ferramentas digitais a todos os colaboradores do Turismo de Portugal • À semelhança do que se verifica com o Q2, de pouco serve ter as ferramentas se as mesmas não são corretamente utilizadas • Uma maior ligação da administração com os seus colaboradores diariamente e não só quando é para parecerem bem na fotografia. • Comunicar melhor os projetos, explicá-los, envolver as pessoas e ser realista, medidas para ser notícia de jornal não fazem a mudança • As Ferramentas Digitais são fantásticas mas não fazem tudo, a intervenção das pessoas chega onde a informática não chega!!!! com pessoas tudo tem mais cor, luz e sabor . Sou a favor da modernidade, mas não só, encaro a era digital uma grande ajuda, mas nunca numa lógica de substituição • Avaliação dos diretores de departamento; envolver os RH's na gestão de carreiras dos colaboradores; delineamento de objetivos reais por colaborador e por departamento; existência de reuniões interdepartamentais de forma a conhecer-se o que se faz em cada departamento • Possibilidade de consulta de informação técnica produzida pelos vários departamentos, nomeadamente; Qualificação de Oferta, Promoção e Marketing • A avaliação regular e sistemática dos projetos implementados, dos seus resultados, limitações e opinião dos utilizadores • Recomendo que o TdP valorize os seus colaboradores, nomeadamente os seus monitores internos das escolas. Que pague vencimentos dignos para estes formadores/monitores, comparados com os técnicos superiores. Que haja equiparação e |
|--|---|

| | |
|--|---|
| | <p>equivalência entre estes monitores internos e aqueles que entram nas funções de formação e monitoração pela primeira vez. Há monitores internos nas escolas, com coordenação e chefia das secções, que auferem pouco mais que o ordenado mínimo nacional, comparado com o seu colega ao lado, que por acaso foi seu ex-aluno e que recebe quatro a cinco vezes mais, pela formação dada e de menos qualidade</p> <ul style="list-style-type: none"> • As chefias do Turismo de Portugal não podem estar mais de 5 anos no mesmo posto de trabalho • O sucesso de uma organização não é medido pela tecnologia ou pelo nível de digitalização, mas sim pela felicidade e bem-estar dos colaboradores! • Julgo que há RH muito validos e com excelentes ideias em termos de organização de trabalho, de sistemas, que não são valorizados. Não se realizam sessões de brainstorming para "acolher" ideias, para se trabalhar em equipa • Necessitamos de investimento na área dos sistemas e softwares de apoio à formação; 2- Necessitamos de melhorar significativamente a qualidade da Internet disponível nas escolas, sobretudo na largura de banda; 3- Necessitamos de formação em diversos domínios do digital • A escolha das chefias deveria ter em consideração não só a experiência profissional na área, a gestão coerente, e organização do trabalho, como também a aptidão comportamental e sensibilidade relacional com as pessoas que coordena. Um colaborador que se sinta apoiado pela sua chefia é sem dúvida um melhor e mais eficaz trabalhador • Facilitar o processo de venda e faturação. Emitir uma fatura não pode demorar mais de 1 minuto o que com os sistemas atuais é impossível de alcançar • Que a aposta no digital não seja um processo avulso e à medida de cada área de competência, mas que permita, finalmente, a interligação entre todas as áreas do organismo |
|--|---|

| | |
|--|---|
| | <ul style="list-style-type: none"> • Sugiro a implementação de ações (ex: estágios de pequena duração rotativos) que permitam conhecer as funções de todos os departamentos • A transformação digital envolve uma formação permanente e constante, adaptada às características e funções de cada funcionário envolvido, e assim deve ser considerado o conhecimento individual na formação, sem prejuízo das ações de formação genéricas • Deve-se alinhar todos objetivos estratégicos dos departamentos e procurar sempre um alinhar as TIC e os processos de negócio, só assim pode haver resultados para uma transformação digital • Os objetivos e o planeamento de execução dos projetos devem ser definidos em articulação com as diferentes unidades do TdP • Detetam-se desconformidades relativas a valores envolvidos em apoios financeiros provocadas pro deficiente interação entre programas |
|--|---|

Table 5 Quotes from the respondents on information they would like to share with the organization

Appendix 11 – Original Questions from Forrester Model

Questions used in the survey to assess digital maturity segments, as per Forrester’s model (Forrester, 2016).

“How much do you agree with each of the following statements?”

0 = Completely disagree 2 = Somewhat agree
 1 = Somewhat disagree 3 = Completely agree

Culture

| | |
|--------------------------|--|
| <input type="checkbox"/> | We believe that our competitive strategy depends on digital |
| <input type="checkbox"/> | Our board and our C-level executives back our digital strategy |
| <input type="checkbox"/> | We have the right leaders to execute on our digital strategy day-to-day |
| <input type="checkbox"/> | We invest in targeted digital education and training at all levels of our organization |
| <input type="checkbox"/> | We clearly communicate our digital vision both internally and externally |
| <input type="checkbox"/> | We take measured risks in order to enable innovation |
| <input type="checkbox"/> | We prioritize overall customer experience over the performance of any individual channel |

Organization

| | |
|--------------------------|--|
| <input type="checkbox"/> | Our organization structure prioritizes customer journeys over functional silos |
| <input type="checkbox"/> | We dedicate appropriate resources to digital strategy, governance, and execution |
| <input type="checkbox"/> | The staff supporting our critical digital functions are best in class |
| <input type="checkbox"/> | We have digital skills embedded throughout our organization |
| <input type="checkbox"/> | Our organization model encourages cross-functional collaboration |
| <input type="checkbox"/> | We have defined and repeatable processes for managing digital programs |
| <input type="checkbox"/> | Our vendor partners deliver value that enhances our digital competencies |

Technology


| | |
|--------------------------|---|
| <input type="checkbox"/> | Our technology budget is fluid to allow for shifting priorities |
| <input type="checkbox"/> | Our marketing and technology resources work together to co-create our digital technology road map |
| <input type="checkbox"/> | We have a flexible, iterative, and collaborative approach to technology development |
| <input type="checkbox"/> | We leverage modern architectures (APIs, cloud, etc.) to promote speed and flexibility |
| <input type="checkbox"/> | We measure our technology teams by business outcomes not just system up-time |
| <input type="checkbox"/> | We use customer experience assets, like personas and journey maps, to steer our technology design |
| <input type="checkbox"/> | We use digital tools to promote employee innovation, collaboration, and mobility |

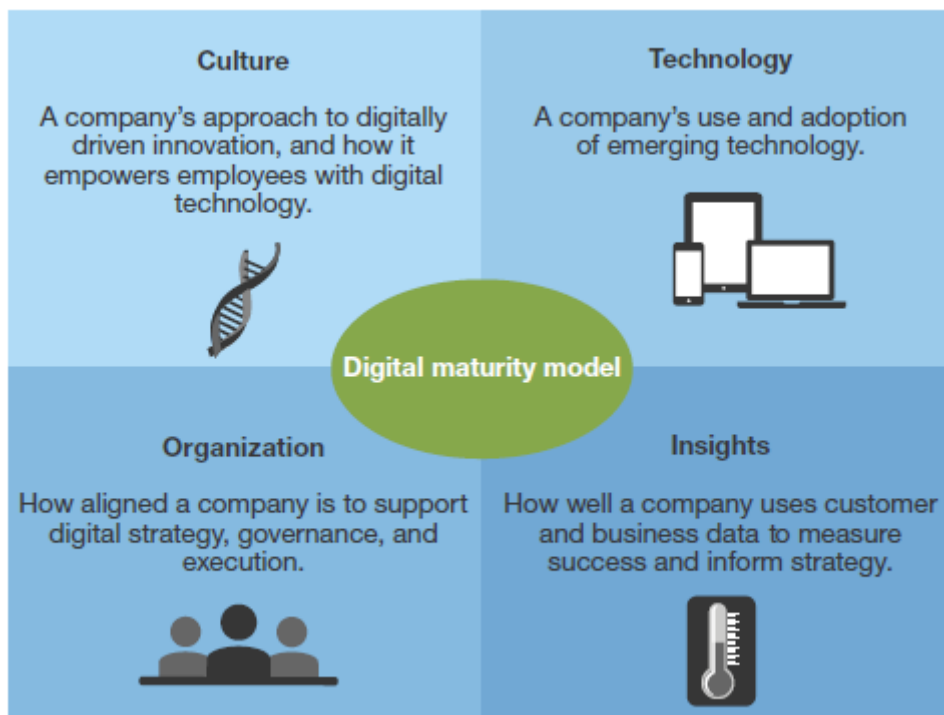
Insights

| | |
|--------------------------|--|
| <input type="checkbox"/> | We have clear and quantifiable goals for measuring the success of our digital strategy |
| <input type="checkbox"/> | Every employee understands how her performances ties to corporate digital goals |
| <input type="checkbox"/> | We use customer-centric metrics like Net Promoter Score or lifetime value to measure success |
| <input type="checkbox"/> | We measure how channels work together to accomplish a desired outcome |
| <input type="checkbox"/> | Customer insight actively steers our digital strategy |
| <input type="checkbox"/> | Customer insights inform digital design and development |
| <input type="checkbox"/> | We feed lessons learned from digital programs back into our strategy |

Appendix 12 – Forrester Maturity Segments 4.0

Distribution according to maturity segments (Forrester, 2016), for a better understanding of the digital maturity framework proposed, and segment division.

|  | Maturity segment | Characteristic behavior | Strategy | Score range |
|---|------------------|--|--|-------------|
| | Differentiators | Leveraging data to drive customer obsession. | Blend the digital and physical worlds. | 72-84 |
| | Collaborators | Breaking down traditional silos. | Use digital to create competitive advantage. | 53-71 |
| | Adopters | Investing in skills and infrastructure. | Prioritize customer relationships over production. | 34-52 |
| | Skeptics | Just beginning the digital journey. | Prompt a willing attitude. | 0-33 |



Appendix 13 – Theoretical approach to DT Framework

Below the theoretical approach the framework present in the thesis.

I – Assess the change: in-depth analysis covering organizational ability to handle change, involving several assessments on IT/Business factors, but also an executive prioritization and commitment towards DT. Moreover, since TdP is a public organism, budgetary factors and governmental regulations should be accounted for while identifying success factors. Considering the survey's results, enabling communication and giving employees a voice in the organization should be an important first step. Moreover, business scenarios segmented to corporate needs will allow TdP to better evolve their digital maturity levels over time.

- a) Internal communication plan: making TdP' s employees feel part of the process. DT is not only about technology, but a lot about change management and making everyone in the organization part of the process. An executive communication plan considering the available means should be disseminated broadly indicating next steps and involving every employee to support and be part of a new era in TdP. 99% of the survey respondents believe that digitalization will not risk their jobs and 85% feel that automation would make them more productive, hence they may be open to change and to be part of the process.
- b) Initial interviews and surveys: understanding where does TdP digital maturity stand (with a more in-depth and C-Level buy-in approach), employee satisfaction levels with current workplace and way of work, typification of personas and business scenarios, identification of pains and employee's feedback/inputs on internal processes and current technology scenario and business relationships.
 - a. An initial anonymous survey to all employees should be conducted in order to attain a broad specter of data to allow for correlations and key pains to address in an initial deployment phase.

- b. Qualitative in-person interviews (including focus groups) with a significant number of employees to thoroughly build an adapted persona and business scenario map, providing insights into technology adoption plan, required training and other change management activities. Moreover, qualitative insights will help to identify barriers to change, needed skills to acquire, how employees produce and consume information, and potential for process improvement.
 - i. Persona: archetype that describes a group of employees and identifies work preferences within TdP as a “fictional person” that performs common set of activities and share similar responsibilities (Meier, 2015).
 - 1. Identify profiles, responsibilities, challenges, workstyle, needs and wants, map “day in the life of”, position key DT scenarios
 - 2. Compare different personas and built a collaboration network based on the DT scenarios
 - ii. Business Scenario: high-level narrative of how work is done and enterprise scenarios that should be prioritized and categorized according to TdP’ s strategy, key enablers and personas:
 - 1. Internal ecosystem: internal processes and digital workplace focused on each business units needs and collaboration tools
 - 2. External ecosystem: engage with travelers, partners, employees and outside audience and get insights in real time.

II – Design the change: roadmap and strategy definition based on internal information through workforce analysis, governance and change management models. Having understood what supports effective decision making and current state, how should the evolutive roadmap be thought and measured to allow for a smooth disruption in the long term, considering industry trends and worldwide best-practices. In this phase, a current and future governance assessment

should be considered to understand possible changes to be implemented. Being a governmental institution, TdP ought to obey public sectors requirements (being those security, compliance, technology...), hence they should be explicit to allow the design strategy to take those into account and, adding to this, having a benchmark of which other governmental institutions have, or are, undergoing a DT process. An internal business and technology ecosystem analysis can be undergone to ease future phases since this will allow the business model to be adapted according to the specific needs of departments and business units. When designing the DT process, a detailed and extensive requirements analysis, KPIs definition and scope needs to be validated by the digital execution team.

a) Marketing and Communication plan: Q&A, spreading the word about new capabilities and change through the means available (email, newsletter, enterprise networks, posters, apps, local on-site initiatives), “cloud of words” about change, etc. Communication was a big blocker mentioned in the survey and, also, considering the “Collaborators” frame, marketing ought to be strategized and not only operational, it should be used as a business lever to planning which will, in time, result in structured execution.

b) Design Thinking Workshops (Brown, 2008)

a. Innovative framework and approach for developing solutions based on methods for creative action (Stanford, 2017): (I) **Empathize**, developing a deep understanding of the challenge, (II) **Define**, clearly articulating problems needed to be solved, (III) **Ideation**, brainstorming of potential solutions and its selection and development, (IV) **Prototyping**, design prototype(s) to test parts of the solution, (V) **Testing**, engaging in continuous short-cycle innovation process to continuously improve the design. Design thinking is, shortly, a process based method of creative action through a framework and approach for developing solutions (see appendix 8 for a brief overview of how a design thinking process happens).

c) Sponsorship model (McDonald, 2015)

- a. DT is a key top management and should be addressed bottom-down in a hierarchical scale. Executive sponsorship explaining employees the benefits and advantages of DT and its roadmap is crucial. A sponsor can have several levels and, as a result, be able to collect responses to digital challenges amongst peers, facilitating issues, channel conflicts, division of responsibilities, risk management and, last but not least, be responsible for having the right people in the room.
- b. Building the organization's capability and capacity to create value - whether from new and current opportunities, businesses and technology combinations, planting the internal relationships required to decision-making and staff buy-in.

d) Coaching plan (Capgemini Consulting, 2013)

- a. Companies are leveraging their "digital champions" through both informal and formal roles to ease skills transfer and engage with the rest of the organization. CDO (Corporate Digital Officers) and digital innovation advisors are starting to arise in most companies to address this kind of mentality and technology shift to digital and data-centered workplace.
- b. Digital champs encourage and think of new ways to promote DT inside the organization. Plus, they should be focused on governance models to increase adoption and a smooth change management towards a digital workplace, having a direct contribution in the modelling of the DT strategy. 3 people showed interest by email on being part of the Digital Champs program, which may imply that less than 2% of the sample is interested in proactive learning and act as change makers within TdP (given the response bias, no assumption of resistance to change was assumed).

e) Training plan (Kane G. , Palmer, Phillips, Kiron, & Buckley, 2015), (Capgemini Consulting, 2013)

- a. Digital skills (please refer to appendix 9 for a broader set of digital skills most required) are exponentially growing in organizations and training programs need to be initiated internally, whether through partnerships with other entities or development of a tailored plan to compensate for the digital skills gap, thus allowing employees to better understand and use new technologies and platforms.
- f) Recognition Plan (Rich, 2017)
- a. Motivation, quality and employee's buy-in makes all the difference in an organization's culture and success to attain a DT process. Hence, proper sourcing, development and recognition are key to acquire, improve and retain talent which will lead DT internally and evangelize it on all levels. In the survey, respondents commented that their work was not recognized and showed demotivation towards some aspects of the HR benefits within the organization,
- g) Resistance Management Plan (McConnel, 2015)
- a. Enable a strong, shared sense of purpose to facilitate obstacle prevention and alleviate political resistance because people are moving in the same direction and sharing the same values. Freedom to experiment, helping people to prioritize, make decisions and rethinking their current way of working is crucial for a long-term strategy.
 - b. Distributed decision-making, to enable employees to have a voice in DT, is of the utmost importance in resistance management because, feeling part of the process and identifying direct ownership will ease entropy on several levels.
 - c. Response to the influence of external trends for people to understand the value of digital.

III – Implement change: core adoption plan to support change involving tailored made change management and execution plans. Considering phases I and II, where a comprehensive view of

DT has already been provided, phase III should consider a timed milestone program with specific outcomes and previously defined KPIs to understand readjustments to the program. Business scenarios need to be categorized and validated by teams, digital champs who will drive adoption chosen and, crucial to a successful implementation, a pilot environment which will allow a specific group of employees (beta-testers) to be part of a DT proof-of-concept. Plans previously considered in phase II will now be implemented. Also, the survey results showed that there are a lot of duplicate and unintegrated systems and processes that could be optimized.

IV – Measure value of change: reporting and adjustment to improve and accelerate adoption and the DT effectiveness within the organization. Business and Technology (see figure 8) units need to be aligned and provide insights on reporting and blockers. Setting the right metrics and understand which initiatives are providing positive ROIs is of the utmost importance. Speed, efficiency and risk should be quantified and analyzed using business intelligence methods that will allow to turn data into business insights. This value of change is crucial to attain a successful business case where several metrics can be highlighted – internal rate of return (profitability of potential investments), risk-adjusted NPV (valuing future risk cash flows), payback period, TCO analysis (more related to infrastructure), ROI and ROMI, individual employee assessments (adoption metrics, proficiency measures, readiness, help-desk requests, engagement and buy-in...), etc.