

Defining an effective Digital Transformation Strategic Framework in a Knowledge-Based Organization

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ABSTRACT

This research focuses on the purpose of a digital strategy for a knowledge-based organization. Identifying the key elements that should be included in a successful digital strategy framework for such an organization, like the OECD. Having an effective digital strategy framework for a knowledge-based organization is key to maintaining leadership in evidence-based analysis and optimizing the use of data, information, and knowledge available through digital means. This requires building out the next generation of policy outputs and other AI-enabled processes, adapting to rapid technological advancements, and ensuring coherence and consistency in data and knowledge management across the organization. A successful digital strategy framework should include design principles, working principles, values, goals, and governance that align with the mission of the organization, guide how work must be approached, and enable better data, information, and knowledge stewardship. A qualitative research approach was undertaken to understand people's experiences, practical perspectives, and recommended best practices applicable to the research question at hand.

Keywords: Knowledge based, **Digital Transformation**

Chapter 1: INTRODUCTION AND GENERAL CONTEXT

Background

The OECD was established in 1961 and has its headquarters in Paris, France. Originally, it was created to administer the Marshall Plan, which was a U.S. program to rebuild Europe after World War II. Since then, the OECD has grown into a forum for member countries to discuss economic and social policy issues, and to develop policies based on evidence and best practices.

The OECD's membership consists of 38 countries, including most of the world's leading industrialized nations. These countries are mainly from Europe, North America, and the Asia-Pacific region, but there are also four Latin American countries (Chile, Colombia, Costa Rica, and Mexico) and two Middle Eastern countries (Israel and Turkey) that are members.

The OECD is governed by a Council that is made up of representatives from each member country. The Council meets regularly to discuss policy issues and to make decisions about the direction of the organization. The Council is supported by a Secretariat, which is responsible for carrying out the day-to-day work of the organization.

The OECD also has several committees and working groups that focus on specific policy areas, such as education, environment, health, and tax policy. These groups bring together experts from member countries to share knowledge and develop policy recommendations. Overall, the structure of the OECD is designed to promote collaboration and cooperation among member countries and to provide a platform for evidence-based policymaking.

Digital technologies have been transforming the global economy and how knowledge-based organizations, like the OECD (Organization for Economic Co-operation and Development), are structured and operate.

Recent advances in artificial intelligence and machine learning, for example, are creating new possibilities that could barely be imagined just a few years ago. As the ability and capacity to generate data grows exponentially inside an organization like the OECD, so does the innovation potential. In that context, the Organization's data, information, and knowledge—secure and well-managed—foster confidence and trust in its outputs as well as in its services to internal staff and other stakeholders.

Therefore, the Organization's data, information and knowledge are strategic assets that are at the heart of its business processes, its standards, and the services delivered to internal users, clients, and other relevant stakeholders. However, given the potential offered by recent technologies and the ever-increasing power of all things digital, any knowledge-based organization must improve continuously how it collects, creates, designs, protects, uses, manages, curates, disseminates and shares those data, information, and knowledge to leverage this exponential capacity.

Many organizations have embarked on the implementation of their digital initiatives to enable them to produce an initial wave of digital services to serve their needs. However, given the rapid technological advancements and ever-dynamic environment, significant effort and investment are still required to allow these digitalization efforts to deliver outputs better, faster, and reliably for greater relevance and global impact.

For any knowledge-based organization to maintain its leadership in evidence-based analysis, drawing on (big) data, information, and knowledge available through digital means, it needs to be able to build out the next generation of policy outputs (e.g., eBooks, Data/Knowledge Hubs) and other AI-enabled processes, like translation, surveying, and talent management. Otherwise, the organization risks falling behind and potentially losing out to other entities (public and private) that are better resourced-and digitally savvy.

In that sense, any Digital Strategy needs to be adapted to the continuous advances in digital technologies, and to the corresponding changes in how specifically the OECD and any other knowledge-based organizations obtain and create data, information, and knowledge.

Any Digital Strategy needs to articulate design and working principles as well as values that will ensure a coherent and consistent approach to data and knowledge management across an organization. A Digital Strategy also needs to be scoped within a clear governance framework to ensure compliance with those principles and values.

Having an effective strategic framework enables a Digital Strategy to create the conditions for better data, information, and knowledge stewardship at a knowledge-based organization, thus enabling optimization, security, and integrity of these critical resources.

Research question and objectives

The purpose of this interim research project was to identify the critical building blocks and key elements required to build an effective and successful strategic framework comprised of design principles, working principles, values, goals, and governance that make up the digital strategy of the OECD, a knowledge-based organization.

Based on the previously explained background, the research question can be stated as the following:

What are the key elements that a digital strategy framework should include or address to design a successful and effective digital strategy in the OECD to become a competitive knowledge-based organization?

Chapter 2: LITERATURE REVIEW

The first phase of the literature review process focused on the identification of existing research on digital strategic frameworks and digital strategy approaches in current literature. This provided the foundation to determine what the standard elements are based on previous research work. The second phase consisted in determining what are the key elements in these digital strategic frameworks which are identified as success factors

factors in the actual definition and implementation of a digital strategy in an organization. In the third phase, the literature review process focused on the applicable concepts and theories that could represent a meaningful application in the context of a knowledge-based organization.

The critical review of the literature allowed drawing conclusions and findings on the design principles, working principles, values, goals, and governance that would make the definition of a digital strategy successful including the steps to follow in the formulation of a preliminary implementation roadmap.

An initial review of already existing digital strategic frameworks and models in the literature provides a collection of relevant approaches to consider, mostly from a theoretical and scientific perspective applicable to use cases in the context of private or productive sectors, like (Correani et al., 2020) and (Gimpel et al., 2018). However, existing literature and research applicable to knowledge-based organizations are relatively less available (Landeta Echeberria, 2020).

Existing literature focuses more on proposed theoretical models applicable in industry and private sectors, relevant literature review will be included. Applicable research in the knowledge-based sector, including the public sector, will be also reviewed to establish possible connections between what has been identified in other domains which have a reasonable degree of practical application in the sector being targeted. The approach will be to extrapolate some research elements found in the existing literature to identify a theoretical-practical correlation that can be explored and applied with success (Korachi et Bounabat, 2019).

A thorough review of strategic frameworks applicable to digital transformation strategies was performed to draw a clear view of the current literature available on the subject. The following criteria were applied in the review of the main principles and values a digital strategic framework should include.

At the core of any digital strategy are key principles and values that align with the mission of the organization and guide how work must be approached.

Design principles are strategic parameters that guide the overall approach to addressing the digital needs of an organization and the stakeholders it serves (Srai and Lorentz, 2019). They strongly reflect the operating or business model of the organization. Working principles guide how each specific project or program is approached. Put into practice, these principles ensure that the digital, knowledge, and information work continues to meet the needs and expectations of employees, users, and all relevant stakeholders. Values are the ethical and behavioural standards to which the organization holds itself accountable. They ensure that work upholds the ethical standards of the organization and follows the main guidance currently discussed about digital ethics (Floridi, 2021).

Design principles are strategic parameters that guide our overall approach to addressing the digital needs of an organization and the stakeholders it serves. As mentioned above, design principles support the digital strategy and reflect the operating or business model of an organization. They guide the understanding of the needs of users and the problems that they wish to solve. They also ensure that the user experience, when interacting with the organization's digital platforms, is seamless, integrated, and consistent.

In particular, the Industry 4.0 age has introduced a shift in user and clients' behaviours as they are transitioning from traditional user experience models to more advanced and sophisticated channels introduced and promoted by emerging digital technologies (Lee and Lee, 2020). The user-centric design orientation is becoming more relevant to the need of strengthening digital leadership capabilities aligned with the development of digitally enabled business models (Mihardjo et al., 2019).

In a knowledge-based organization, data and knowledge need to be openly available to all relevant stakeholders via the organization's digital platforms to remain relevant and create value (Stallkamp and Schotter, 2021). Published organizational content and source code should also be open to the outside world for the greater public good. This calls for the adoption of open standards, and supported open-source code, which is used where appropriate, for easier interoperability with other (external) digital platforms and better value for money. This will foster the possibility of having an "organization as a platform" approach which can also promote innovation and foster the co-creation of new digital offerings (Kuhn et al., 2022).

Mostly for business agility, cost efficiency and enhanced security reasons, implementation of digital solutions should be designed having the cloud in mind – whenever it is the faster, more efficient, and more secure option (Khalil, 2018). The organization's adoption of specific cloud services will be based on functionality, interfacing capability with other digital tools and platforms, and assessed risk to the organization, including compliance with internal security and privacy standards and policies (Stein et al., 2020).

Another principle to consider is reusability. This means that databases, digital solutions, and platforms are re-used where fit-for-purpose, to avoid additional development and operating costs, and to deliver just in time rather than reinventing the wheel as suggested by (Ross et al., 2019). This can be achieved by adopting the definition of appropriate enterprise architecture and design standards to ensure coherence and interoperability.

The required upfront investments and ongoing operating costs need to be identified as key elements in the organization's affordability principle. This is linked to the financial dimension the organization needs to explore regarding its ability to finance its digital strategy (Hess et al., 2016).

For knowledge-based organizations, focusing on evidence-based and open data principles are key to fostering digital solutions that deliver real impact in policy work (Luthfi and Janssen, 2019). This has a direct effect on increasing stakeholder engagement to support policy-making activities.

Standardization is a top principle. It drives efficiencies, reduces risk and enables a whole-of-organization approach to digital service delivery, collaboration, and knowledge-sharing (Saariko et al., 2020). Customization of any technology, platform or process (e.g., handling data) should be on an exceptional basis when all possibilities for standardization have been considered and should be approved by the appropriate governance body.

Security and privacy by design mitigate reputational, financial, and other risks to the business and individuals (Schäfer et al., 2022) and (Bhatia and Malhotra, 2018). A balanced approach to security controls and compliance is based on the assessed risk, supported by new advances in security technology

based on artificial intelligence and big data analytics (Araz et al., 2020).

Working principles guide how each specific project or program should be approached. Put into practice, these principles ensure that the organization's digital, knowledge, and information work continually meets or exceeds the needs and expectations of the organization and its stakeholders

Continuously improve the digital experience, and its impact on the working environment, practices, and outcomes for users, the quality of the organization's digital platforms, and the skills to use new technologies and build new solutions. Through systematic continuous improvement, the digital value is maximized for efficiency and effectiveness (Ebert and Duarte, 2018). Listening/user feedback is also a key element of continuous improvement.

Security builds trust in the quality, availability and confidentiality of the organization's data and knowledge. This trust contributes to the organization's convening capability and enhances the trust in its recommendations and outputs, and evidence-based policy insights and expertise. (Barrane et al., 2020). This is essential to support good data stewardship (quality, reuse, and interoperability).

A knowledge-based organization requires transparent and appropriate measures to protect personal data used to advance its mission. This includes the personal data of staff, external stakeholders, visitors, and all personal data provided to the organization as part of the data/evidence for policy analysis (Schäfer et al., 2022).

Digital innovation is essential to provide resources and incentives for piloting new working methods, which, if successful and affordable, are scaled up to benefit the organization, staff, and external stakeholders (Hinings et al., 2018). Knowledge-based organizations need to encourage innovation and learning in programmed digital projects to complement any research and development institutional efforts.

The performance and business value of digital initiatives are measured to evaluate the impact of the investment, and the overall quality of the resulting digital services (Korachi et Bounabat, 2019). Key Performance Indicators (KPIs) need to be developed to measure the effectiveness of strategy its and impact on governance.

Organizational values can be defined as the ethical and behavioral standards to which the organization holds itself accountable. They ensure their work upholds the ethical standards of an organization.

Good data stewardship warrants the collection of digital information and data for an identified purpose while maintaining its quality and integrity. This value ensures that data can easily be reused by others while respecting security, privacy and data-sharing arrangements. It also ensures that data archiving and data disposal are consistent with standards.

Use digital technology responsibly and ethically, particularly in the design and use of technology and processes which automate decision-making or can be subject to analytic bias, which leads to the establishment of corporate digital responsibility (Lobschat et al., 2021). It should be enforced that privileged and administrative access to personal data and systems is limited by design.

Based on collaborative values, multidisciplinary teams and partnerships are enabled by digital technology in an organization. Data, information, knowledge and insights are shared to engage in policy development and deliver common goals. This generates cross-functional and external cooperation, or collaborative business models (Berkers et al., 2020), which delivers integrated digital skills and capabilities

Accountabilities and responsibilities are clearly defined and managed through the adoption of pertinent digital governance arrangements. Typically, a RACI matrix will provide the digital activity and decision framework to allow governing bodies to function in an effective and practical approach (Mosneanu, 2020).

Chapter 3: RESEARCH METHODOLOGY

Defining a digital strategy framework can potentially involve several research methodologies, depending on the specific context and goals of an organization. For the case of a knowledge-based organization, like the OECD, a qualitative research approach was chosen. This type of research is the most suitable to understand people's experiences, practical perspectives, and recommended best practices applicable to the research question at hand.

Qualitative research typically involves collecting rich and detailed data that is often subjective, contextual, and interpretive in nature. This type of data can provide a deep understanding of the social, cultural, and psychological factors that shape people's thoughts, feelings, and behaviors. Qualitative research is often used in social sciences, such as anthropology, sociology, psychology, and education, but can also be applied in other fields such as marketing, business, healthcare, and of course digital transformation.

The literature review to support the research process involved gathering and analyzing existing reports, and publications related to the definition of digital strategic frameworks. This provided a good starting point for identifying trends, best practices, and gaps in the existing knowledge.

A survey was launched among a group of IT managers and digital specialists to build a self-assessment of the current maturity level of a digital framework. The questions covered a wide range of topics related to digital strategy, framework design, digital culture, and learning platforms, among others. Overall, these questions provide a comprehensive framework for assessing the maturity of an organization's digital transformation efforts.

The main results show that there is a gap in the design of the digital framework, its alignment with business needs and performance objectives, and the ability to measure digital performance. Additionally, the frequency of updates and the presence of formal business cases for digital initiatives were noted as also important indicators of the maturity of the digital framework.

Group interviews were performed with key business areas (selected managers and knowledge management specialists). They expressed the digitalization and business transformation needs in the Organization. These individuals provided relevant insights into the needs, expectations, and challenges related to an ideal digital strategic framework. The main goal was to identify key objectives, relevant design and working principles and values. Interviews were conducted online, via Zoom and MS Teams.

The group interviews focused on the following questions:

What do you understand by digital strategy and strategic framework?
Describe your responsibilities and the main knowledge, including digital skills, required to efficiently carry out your functions
How would you describe your level of digital skills in the workplace? (dexterity) On a scale from 1 (low) to 5 (very high). Explain.
How motivated are you to adopt new digital approaches? What would motivate you to learn new digital skills? What prevent you to achieve new digital skills?
What are the main components to define a digital strategy? Describe your primary reasons for having a strategic framework leading to an initial implementation roadmap.
What digital skills do you need, and do you foresee needing? (Cybersecurity, digital communication (website, social network, newsletters etc.), collaboration & research, working remotely, other)
What is your view about the resources needed and required governance arrangements?
What do you consider to be the key success factors to define an effective digital strategy?

The group interviews conducted with key business areas focused on various aspects related to digital strategy and strategic framework. The first question aimed to understand the participants' understanding of these concepts, which can help to align everyone's understanding and set a common ground for further discussion. The second question aimed to identify the responsibilities and knowledge required to carry out their functions efficiently, including the digital skills needed.

The third question aimed to assess the participants' level of digital skills in the workplace, which can provide insights into the existing skill gaps and areas that need improvement. This information can be used to design appropriate training and development programs.

The fourth question aimed to understand the participants' motivation to adopt new digital approaches, including the factors that motivate or prevent them from learning new digital skills. This information can help to design effective change management strategies and overcome any resistance to change.

The fifth question aimed to identify the main components required to define a digital strategy, including the reasons for having a strategic framework leading to an initial implementation roadmap. This information can help to ensure that the digital strategy is comprehensive and aligned with the organization's goals and objectives.

The sixth question aimed to identify the digital skills that the participants need or foresee needing, such as cybersecurity, digital communication, collaboration and research, working remotely, and others. This information can help to design appropriate training and development programs and ensure that the organization's workforce has the required skills to achieve its digital transformation objectives.

The seventh question aimed to understand the participants' views on the resources and governance arrangements needed to implement a digital strategy effectively. This information can help to ensure that the necessary resources are available and that the governance arrangements are appropriate and effective.

The eighth question aimed to identify the key success factors for defining an effective digital strategy,

which can help to ensure that the digital strategy is successful and achieves its intended goals and objectives.

A 3-hour workshop was also conducted to collect relevant insights from a larger number of participants representing the overall user community in the Organization. The workshop was designed with a working agenda that enabled the elicitation of the information needed. The workshop was organized with an audience of about 60 people, representing business areas and clients of the different digital solutions currently available in the Organization. The workshop objectives were: a) share the importance of a digital strategy in a knowledge-based, like the OECD, b) establish the current baseline regarding a framework to define and implement a digital strategy in the OECD, and c) brainstorm on the main elements and success factor and identify the next steps.

The workshop was divided into three main parts. In the first part, a presentation was made to provide an overview of the importance of a digital strategy in a knowledge-based organization and the potential benefits of having a strategic framework to guide digital transformation efforts. This was followed by a discussion on the current state of digitalization in the Organization and the existing challenges faced.

In the second part of the workshop, participants were divided into small groups, and each group was given a set of questions to discuss and answer. These questions were designed to elicit insights into the key components of a digital strategy, including the objectives, principles, values, and governance arrangements. Participants were also asked to share their perspectives on the digital skills and resources needed to implement a digital strategy effectively.

In the final part of the workshop, each group presented their findings, and a summary of the key insights and recommendations was compiled. The main success factors for defining an effective digital strategy were identified as leadership commitment and support, employee engagement and participation, alignment of objectives and priorities, and a clear roadmap and governance framework.

Overall, the research methodology employed in this study involved a combination of a literature review, group interviews, and a workshop, which provided a rich and diverse set of data to inform the development of a digital strategy framework for the OECD. The qualitative approach allowed for a deep understanding of the needs, expectations, and challenges of the organization, and provided valuable insights into the key components and success factors of a digital strategy.

Chapter 4: FINDINGS AND DISCUSSION

The growing interactions between data, algorithms and big data analytics are opening extraordinary opportunities. However, this requires investing heavily in data capabilities and complementary assets to support policy analysis. To remain relevant in a world driven by data, any knowledge-based organization must build new analytics and data management capabilities (Luthfi and Janssen, 2019).

Advances in Artificial Intelligence, including Natural Language Processing (NLP), offer an opportunity to process large volumes of qualitative and quantitative data and convert it into information, knowledge, and insights (Brock and von Wangenheim, 2019).

A knowledge-based organization to respond to a “new communications normal”, driven both by technological changes and increased expectations for greater transparency and accountability. While it will be required to strengthen and build on the relationship with the organization’s core policy-maker audience, a more expectant and skeptical public means that the organization must take greater efforts to branch out, listen to and engage a broader public around solutions to the challenges and realities being faced by people around the world (Barrane et al., 2020). People have the desire to understand and engage with the economic and financial system and the organization must respond by making its content more accessible and understandable and rethinking the way evidence is delivered. In this regard, the organization needs to embrace a new set of communications principles which must be enabled by appropriate digital capabilities and skills (Krøtel, 2021).

With the introduction of new digital technologies in the workplace, and a growing number of digital-savvy staff, there is an opportunity, and need, to raise the overall level of digital literacy across an organization, particularly in key areas such as data science and smart data analytics, digital communication skills, complex document co-authoring, and collaboration in digital team spaces. This focus on learning will also contribute to a more digital culture in the organization (Stofkova et al., 2022).

Typically, knowledge-based organizations have deep multi-sectoral expertise. Through more systematic cross-functional and external collaboration, this expertise could be further leveraged in delivering whole-of-organization responses to the policy challenges clients and stakeholders face (Cozzolino, Corbo and Aversa, 2021).

The ever-increasing threat level of cyberattacks on an organization’s digital platforms, coupled with the new data protection regime at the organization presents an opportunity to apply a new risk-based approach to digital security and privacy.

Existing and emerging digital technologies are changing established ways of working. For example: a) Robotic Process Automation is helping achieve cost savings, shorten processing times, and increase operational efficiency, b) Cloud-based remote conferencing is supporting collaboration on a global scale, and c) Mobile devices are enabling work on the go from almost anywhere and shifting the workplace from physical to digital. Appropriate use of these technologies, commonly referred to as SMACIT (Social, Mobile, Analytics, Cloud, Internet of Things) (Ross et al., 2019), to innovate ways of working is encouraged to yield efficiencies, enhance quality, and improve sustainability (Orji, 2019).

These emerging digital technologies can also provide the opportunity to better structure and bot-automate operational services related to missions, procurement, purchasing, invoicing, recruitments, payroll, conferences, security, help desk, billing, office moves, and other corporate services (Correani et al., 2020) and (Gobble, 2018).

This will help streamline current processes, which in many cases require manual intervention - a source of inefficiency, human error, and delays, and help deliver a seamless user experience. Advanced techniques to collect, analyze and represent operational data (through data visualization) would significantly strengthen management capacity to monitor and optimize the use of resources (Medeiros and Maçada, 2021).

From the above, it can be concluded that digital transformation is the process of leveraging digital technologies to fundamentally change how an organization operates, delivers value to customers, and creates a competitive advantage. For a knowledge-based organization, digital transformation can provide opportunities for increased efficiency, innovation, and collaboration.

Before embarking on a digital transformation journey, it's important to assess the current state of the organization's digital capabilities. This assessment should include a review of current technologies, processes, and culture.

Digital transformation also requires a culture of innovation and experimentation. Leaders should foster a culture that encourages experimentation, risk-taking and learning from failure. It also requires the development of new digital capabilities. This could include investing in new technologies, building new digital skills, or partnering with external organizations to access digital capabilities.

Finally, it's important to measure the success of digital transformation initiatives. This could include tracking key performance indicators (KPIs) such as revenue growth, customer satisfaction, or employee engagement.

By following these steps, knowledge-based organizations can create a strategic framework for digital transformation that enables them to achieve their objectives, build new capabilities, and create a competitive advantage.

Chapter 5: CONCLUSIONS

Digital transformation is the integration of digital technology into all areas of a business, resulting in fundamental changes in how the organization operates and delivers value to its customers. For a knowledge-based organization, like the OECD, digital transformation can greatly enhance its ability to access, manage, and utilize information, leading to improved decision-making and operational efficiency. A digital strategy framework is necessary to guide this transformation process.

The findings of this interim research project show that the digital strategy must align with the organization's business objectives and clearly articulate the value proposition of the digital transformation. This includes identifying the benefits that digital technology will bring to the organization and its customers.

Digital transformation is the integration of digital technology into all areas of a business, resulting in fundamental changes in how the organization operates and delivers value to its customers. For a knowledge-based organization, like the OECD, digital transformation can greatly enhance its ability to access, manage, and utilize information, leading to improved decision-making and operational efficiency. A digital strategy framework is necessary to guide this transformation process.

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A customer-centric approach is also essential for success in the digital era. Organizations need to understand their customers' needs and preferences and design digital experiences that are intuitive, engaging, and seamless.

Digital transformation generates vast amounts of data, which can be harnessed to gain insights into customer behavior, improve operational efficiency, and inform decision-making. A digital strategy should include a plan for collecting, storing, and analyzing data, as well as the tools and skills needed to do so effectively.

An organization's technology infrastructure and platforms are the foundation of its digital capabilities. The digital strategy should assess the organization's existing technology landscape and identify gaps and opportunities for improvement. This includes evaluating the suitability of existing platforms, selecting new ones as needed, and ensuring that they are integrated and scalable.

Digital transformation requires a cultural shift towards agility, innovation, and collaboration. The digital strategy should address the skills and capabilities needed to drive the transformation, including digital literacy, data analytics, and agile methodologies. It should also consider how to foster a culture of experimentation, risk-taking, and continuous learning.

Digital transformation introduces new risks, such as cybersecurity threats, privacy concerns, and compliance issues. The digital strategy should include a plan for managing these risks, as well as clear governance structures and processes to ensure accountability and compliance.

Finally, the digital strategy should include a detailed implementation plan, with clear timelines, milestones, and metrics for success. It should also establish mechanisms for ongoing measurement, monitoring, and course correction, to ensure that the organization continues to evolve and adapt to changing digital landscapes.

A digital strategic framework is essential for designing a successful and effective digital strategy in a knowledge-based organization. Based on research, here are some key elements that the framework should have:

1) Clear Business Goals: The digital strategy should align with the overall business goals of the organization and should clearly articulate the desired outcomes.

2) Understanding of Customer Needs: A good digital strategy requires a deep understanding of customer needs and preferences. This understanding should be derived through market research, customer feedback, and other relevant data sources.

3) Technology Assessment: The framework should include a comprehensive assessment of the existing technology infrastructure, as well as an evaluation of the latest technologies that can be leveraged to achieve the desired outcomes.

4) Resource Allocation: The digital strategy should identify the resources required to implement the strategy, such as budget, staffing, and technology investments.

5) Data Strategy: The framework should include a data strategy that outlines how data will be collected, stored, analyzed, and used to drive decision-making.

6) Implementation Plan: The digital strategy should include a detailed implementation plan that outlines the specific steps required to achieve the desired outcomes.

7) Metrics and Performance Measurement: The framework should include metrics for measuring the performance of the digital strategy, as well as a process for monitoring and reporting on progress.

8) Change Management: A good digital strategy requires effective change management, including communication plans, training programs, and other initiatives to ensure that the organization is prepared for the changes that will result from the strategy.

By incorporating these key elements into the digital strategic framework, a knowledge-based organization, like the OECD, can design a digital strategy that is both effective and sustainable.

One key conclusion drawn from the round of interviews was about the importance of defining a digital strategy roadmap. A Digital Strategy Blueprint typically provides a high-level view of the following aspects of digitalization over a period of time. This also includes a) a clear and concise statement of the organization's digital vision and objectives that align with its overall business strategy, b) an assessment of the current state of the organization's customer experience and the identification of opportunities for digital innovation to enhance customer satisfaction, c) an evaluation of the current operational processes and identification of opportunities for digitalization to streamline and optimize these processes, d) an analysis of the organization's culture and the identification of any barriers to digital adoption, as well as strategies for promoting a culture of innovation and continuous improvement, e) an assessment of the organization's current technology infrastructure and capabilities and the identification of any gaps that need to be addressed to support the digital strategy.

By conducting a high-level assessment of these key areas, the Digital Strategy Blueprint can help the organization to develop a clear and actionable roadmap for digital transformation that is aligned with its overall business objectives. This roadmap can then be used to guide the implementation of digital initiatives, ensuring that they are targeted, effective, and well-integrated with the organization's existing operations and processes.

In summary, knowledge-based organizations must adapt to the changing landscape of digital technology to remain relevant and effective in delivering policy analysis and solutions. This requires investment in data capabilities, digital literacy, and communication principles. Collaboration and cross-functional expertise can be leveraged to provide whole-of-organization responses to policy challenges. Cybersecurity and privacy risks must be addressed through a risk-based approach. Emerging digital technologies such as SMACIT can be utilized to streamline operational services, increase efficiency, and enhance sustainability. Advanced data analytics techniques can be used to monitor and optimize resource use. Overall, embracing a digital transformation will be crucial for the success of knowledge-based organizations in the future.

Chapter 6: REFERENCES

Araz, O. M., Choi, T. M., Olson, D. L., & Salman, F. S. (2020). Data analytics for operational risk management. *Decis. Sci.*, 51(6), 1316-1319.

Barrane, F. Z., Ndubisi, N. O., Kamble, S., Karuranga, G. E., & Poulin, D. (2021). Building trust in multi-stakeholder collaborations for new product development in the digital transformation era. *Benchmarking: An International Journal*, 28(1), 205-228.

Berkers, F., Turetken, O., Ozkan, B., Wilbik, A., Adali, O. E., Gilsing, R., & Grefen, P. (2020). Deriving collaborative business model design requirements from a digital platform business strategy. In *Boosting Collaborative Networks 4.0: 21st IFIP WG 5.5 Working Conference on Virtual Enterprises, PRO-VE 2020*, Valencia, Spain, November 23–25, 2020, Proceedings 21 (pp. 47-60). Springer International Publishing.

Bhatia, S., & Malhotra, J. (2018). CSPCR: Cloud Security, Privacy and Compliance Readiness-A Trustworthy Framework. *International Journal of Electrical & Computer Engineering* (2088-8708), 8(5).

Brock, J. K. U., & Von Wangenheim, F. (2019). Demystifying AI: What digital transformation leaders can teach you about realistic artificial intelligence. *California Management Review*, 61(4), 110-134.

Correani, A., De Massis, A., Frattini, F., Petruzzelli, A. M., & Natalicchio, A. (2020). Implementing a Digital Strategy: Learning from the Experience of Three Digital Transformation Projects. *California Management Review*, 62(4), 37–56.

Cozzolino, A., Corbo, L. and Aversa, P. (2021) 'Digital platform-based ecosystems: The evolution of collaboration and competition between incumbent producers and entrant platforms', *Journal of Business Research*, 126, pp. 385–400.

Ebert, C., & Duarte, C. H. C. (2018). Digital transformation. *IEEE Softw.*, 35(4), 16-21.

Floridi, L. (2021). Translating Principles into Practices of Digital Ethics: Five Risks of Being Unethical. In: Floridi, L. (eds) *Ethics, Governance, and Policies in Artificial Intelligence*. Philosophical Studies Series, vol 144. Springer, Cham.

Gimpel, Henner; Hosseini, Sabiölla; Huber, Rocco; Probst, Laura; Röglinger, Maximilian; and Faisst, Ulrich (2018) "Structuring Digital Transformation: A Framework of Action Fields and its Application at ZEISS," *Journal of Information Technology Theory and Application (JITTA)*: Vol. 19: Iss. 1, Article 3.

Gobble, MaryAnne M. "Digital Strategy and Digital Transformation." *Research-Technology Management* 61, no. 5 (September 3, 2018): 66–71.

Hinings, Bob, et al. "Digital Innovation and Transformation: An Institutional Perspective." *Information and Organization*, vol. 28, no. 1, Mar. 2018, pp. 52–61, <https://doi.org/10.1016/j.infoandorg.2018.02.004>.

Jagjit Singh Srail, Harri Lorentz, Developing design principles for the digitalisation of purchasing and supply management, *Journal of Purchasing and Supply Management*, Volume 25, Issue 1, 2019, Pages 78-98, ISSN 1478-4092.

Khalil, Sabine. "Adopting the Cloud: How It Affects Firm Strategy." *Journal of Business Strategy*, vol. 40, no. 4, Jan. 2018, pp. 28–35, <https://doi.org/10.1108/JBS-05-2018-0089>.

Korachi, Z., & Bounabat, B. (2019). An integrated methodological framework for digital transformation strategy building (IMFDS). *International Journal of Advanced Computer Science and Applications*, 10(12).

Krøtel, S.M.L. (2021) 'Digital Communication of Public Service Information and its Effect on Citizens' Perception of Received Information', *International Journal of Public Administration*, 44(2), pp. 132–145. Available at: <https://doi.org/10.1080/01900692.2019.1672182>.

Kuhn, Peter; Dallner, Simon; Buchinger, Matthias; and Balta, Dian, "Towards "Government as a Platform": An analysis framework for public sector infrastructure" (2022). *Wirtschaftsinformatik 2022 Proceedings*. 4.

Landeta Echeberria, A. (2020). Digital Transformation Strategy Framework. In: A Digital Framework for Industry 4.0. Palgrave Macmillan, Cham.

Lee, S.M., Lee, D. "Untact": a new customer service strategy in the digital age. *Serv Bus* 14, 1–22 (2020).

Lobschat, L., Mueller, B., Eggers, F., Brandimarte, L., Diefenbach, S., Kroschke, M., & Wirtz, J. (2021). Corporate digital responsibility. *Journal of Business Research*, 122, 875-888.

Luthfi, A. and Janssen, M. (2019) 'Open Data for Evidence-based Decision-making: Data-driven Government Resulting in Uncertainty and Polarization', *International Journal on Advanced Science, Engineering and Information Technology*, 9(3), pp. 1071–1078.

Medeiros, M.M. de and Maçada, A.C.G. (2021) 'Competitive advantage of data-driven analytical capabilities: the role of big data visualization and organizational agility', *Management Decision*, 60(4), pp. 953–975. Available at: <https://doi.org/10.1108/MD-12-2020-1681>.

Moşneanu D. (2020) Corporate Governance in the Digital world. *Proceedings of the International Conference on Business Excellence*, Vol.14 (Issue 1), pp. 333-342.

Mihardjo, L., Sasmoko, S., Alamsjah, F & Elidjen, E. (2019). Digital leadership role in developing business model innovation and customer experience orientation in industry 4.0. *Management Science Letters*, 9(11), 1749-1762.

Orji, Chiene Ike. *Journal of Global Business and Technology*; Huntington Station Vol. 15, N° 1, (Spring 2019): 47-57.

Ross, J. W., Beath, C. M., & Mocker, M. (2019). *Designed for digital: How to architect your business for sustained success*. pp. 58-62. MIT Press.

Saarikko, T., Westergren, U. H., & Blomquist, T. (2020). Digital transformation: Five recommendations for the digitally conscious firm. *Business Horizons*, 63(6), 825-839.

Schäfer, F., Gebauer, H., Gröger, C., Gassmann, O., & Wortmann, F. (2022). Data-driven business and data privacy: Challenges and measures for product companies. *Business Horizons*.

Stallkamp, Maximilian, and Andreas P. J. Schotter. "Platforms without Borders? The International Strategies of Digital Platform Firms." *Global Strategy Journal*, vol. 11, no. 1, 2021, pp. 58–80.

Stein, Meredith; Campitelli, Vincent; Mezzio, Steven. *The CPA Journal*; New York Vol. 90, N° 6, (Jun 2020): 20-27.

Stofkova, J. et al. (2022) 'Digital Skills as a Significant Factor of Human Resources Development', *Sustainability*, 14(20), p. 13117.