POLI.DESIGN

FUJITSU

Transformation by Design

Planning Design Strategies and Services for the Next Generation Digital Challenges

shaping tomorrow with you

MAGGIOLI EDITORE

Foreword

In the past decade, digital technology has changed the way we connect, run businesses, and deliver public services. With new uncertainties such as climate change, global pandemics, and social problems such as the imbalance of information or the invasion of privacy, the world is in the midst of chaos. In such times, what is important is to not react recklessly to threats and change, but instead to tackle them swiftly and securely by creating a democratic future where the possibilities of people and society blossom.

Fujitsu is transforming itself from an IT company to a digital transformation company and operating as an organization that generates social value. Fujitsu is moving away from delivering solutions that solve problems that lie before us. Instead, the company is committed to delivering transformations, which will at times overwrite the rules in the market or in society, to dramatically change user experience using digital technologies.

Our experiences since COVID-19 forced us to overwrite many existing norms in our lives and work, and these experiences may have been a factor in prompting this transition. Every day before this calamity, we packed into trains, went to designated offices for designated hours, and went home on another overcrowded train. COVID-19 upended that lifestyle. Every employee is now connected online with internal and external stakeholders and communicates and delivers remotely. Such an autonomous workstyle has become the new normal. Many of us today have welcomed these new ways of working. Ironically, it wasn't existing technological solutions that sparked such transformations and changes in norms and routines. Rather, it was a terrible, unwanted guest disguised in the form of a prehistoric infectious agent—a virus.

Such changes in prerequisites and preconceived notions are the imminent transformations in our society that leave lasting effects. Yet we are capable of bringing about this change without relying on another outbreak. Instead, we can turn to the power of design. Design is the avenue to realizing a sustainable society using the power of technology available to us. Design pushes us to envision a hopeful future from an individual and societal perspective and widens possibilities for actualizations without being limited to how society is today. Fujitsu's Human Centric Experience Design (HXD) has been crystallized from all of our design experience. It intelligibly democratizes the power of design and navigates us to scalable digital transformations for our society. Moving forward, I commit that such a structured design approach along with agile approaches will continue to materialize the scalable software and business sense befitting next generation design.

I must emphasize that the purpose of design is not to superficially make over our products or services, nor is design a tool to produce eccentric ideas. Instead, design is a mindset that every individual should adopt to cultivate innovation and contemporary business literacy.

In the twenty-first century, there is an increasing demand for corporations to clearly define and articulate their purpose and role in society. People are interested in and paying attention to which organizations contribute to creating values for them. Corporate leaders also recognize that for companies to accomplish sustainable and long-lasting growth, it is extremely important for them to explicitly present the *why* of their companies and to fulfill their promises and obligations to people and society. We should no longer be trapped in customer needs of the past or old business concepts and routines. The transformational design mindset requires us to steer away from old constraints. It instead guides us to achieve important goals that people and society aspire to. Every organization should constantly foster and promote this design mindset, since it is the ultimate source of power and drive that shapes a better future.

This book was specially designed and edited to include materials that foster the growth of such a transformative design mindset and offer support and guidance for the process. These materials are based on the research outcomes and the philosophy of Fujitsu's strategic partner, Politecnico di Milano's design department, along with Fujitsu's know-how gained from our own practices. We believe this combination will provide you with tangible knowledge on how design has evolved across industries and various fields. My belief is that to bring about transformation at the required speed and scale, it would be vital for the act of design to become an organizational culture that rejects utter dependence on a handful of experts.

Mr. Takahito Tokita, Fujitsu's CEO and CDXO (Chief Digital Transformation Officer), proclaimed on the July 1 CEO bulletin that design is a crucial corporate management resource and must be applied to Fujitsu's strategies and philosophy in every aspect of the business process. We hope you, the reader of this book, will cultivate a design mindset and become a leader of design-driven transformation today, shoulder to shoulder with other transformation leaders who may not be part of the company, and we hope you share this path in realizing a more fulfilling society. By blending together the digital realm with the power of design, we look forward to creating a yet unfathomable but brilliant world.

Tetsuya UDA
Head of Design Center
Fujitsu Limited

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Envisioning the Future:

Scenario-Building Techniques

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& Elena Marengoni

A designer's mindset is concerned with shaping the future. This is an inherent quality made even more crucial by the rapid transformation the world is experiencing. The field of futures studies focuses on providing methods and tools that can serve this purpose. In particular, the scenario-building techniques presented in this chapter suggests that, while predicting the future is a very difficult task, it is important to use the knowledge of the present time to envision possible future scenarios. The knowledge allows one to then consciously choose in which direction to move, by retracing the steps that will get them there. This chapter presents a brief history of the discipline, its characteristics, its relevance for technology companies, and its practical application.

1. An Introduction to Futures Studies in Design

1.1

Futures Studies: what it is

Futures studies represents a systematic study of possible, probable, and preferable futures that refers to the worldviews and myths that underlie each future. In the last fifty years and more, there has been a shift in the main focus of futurology. It has moved from the idea of predicting the future, to one of mapping alternative futures, to shaping desired futures.

The concept of futures studies is derived from a field of social inquiry where the main purpose is the systematic study of the future. It is recognized by terms such as *futures studies*, *the futures field*, *futures research*, *futuristics*, *prospective*, or *prognostics*. The practitioners related to this field are known as *futurists*. Futurists try to discover or invent, propose, examine, and evaluate possible, probable, and preferable futures. Their objective is to explore alternative futures in order to assist people in choosing and creating their most desirable future.

The concept of futures fields, as it is recognized today, dates back to the 1960s. It is associated with the translation and publication of *The Image of the Future* by F. L. Polak in English in 1961. Together, this book and *The Art of Conjecture* by Bertrand de Jouvenel represented two very important works for this field. Polak used the concept of image of the future to analyze the rise and fall of civilizations, while de Jouvenel used his work to collect many of the principles of futures studies, something no one had done before.

1.
The Image of the Future

2.
The Art of Conjecture

1

2

Future

Wildcard

Scenario
Probable

Baseline

Preferable

Present

Past

Plausible
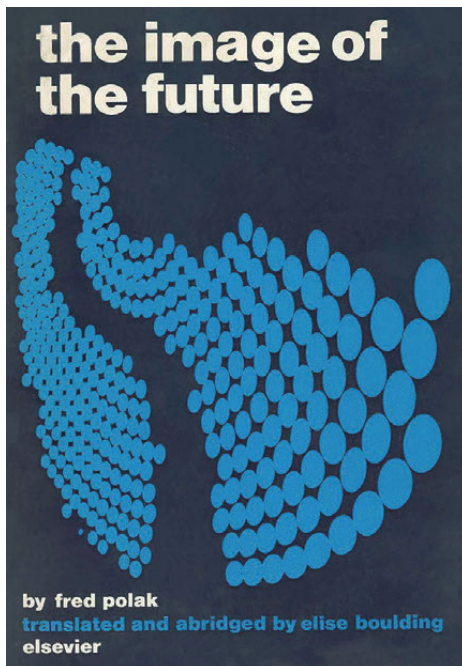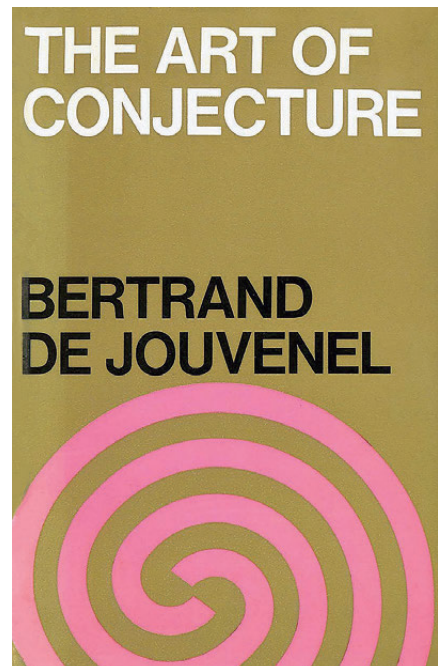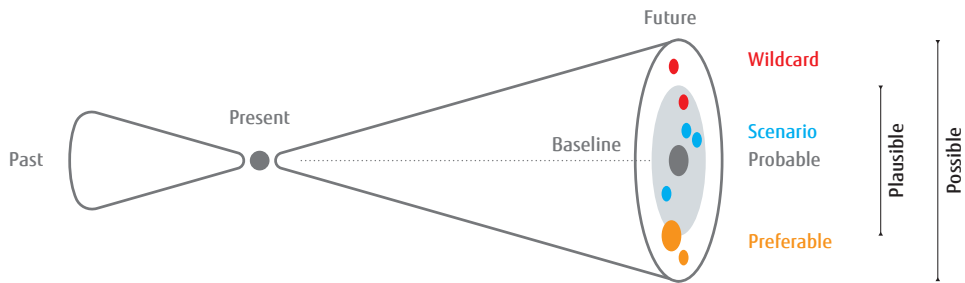
Possible

The futurists' objective is to maintain or improve the welfare of humankind and the life-sustaining capacities of Earth itself. They try to reach this objective by systematically exploring alternative futures using prospective thinking. Bell (1996) argued that they try to create "new, alternative images of the future visionary explorations of the possible, systematic investigation of the probable, and moral evaluation of the preferable." The main purpose is to try to know the possible, the probable, and the preferable.

To achieve this, they study and try to understand what causes change. For instance, they observe and identify the main drivers of and reasons underlying technological developments, as well as the changes in the political, economic, social, and cultural realms.

Thus, futurists attempt to clarify goals and values; describe trends; explain conditions; formulate alternative images of the future; and invent, evaluate, and select policy alternatives.

It is necessary to emphasize that not all the futurists deal with the same topics and areas of study. There are two main classifications of futurists. The first regards those who are primarily *analysts*, focusing their efforts on methods, theories, and other scholarly issues. The others are primarily *activists*, dedicating their efforts to shaping the future itself and applying those methods and theories.

Another important aspect to clarify is that futures studies also involves the present. It is crucial to have a constant look to the present, because actions that take place in the present are those that contribute to shape the future. For this reason, it is necessary to study the present conditions and understand which actions are taking place. This helps identify the actions that need to be developed to shape a future that will be as desirable as possible.

Studying the present is also important to help people balance the demands of the present against those of the future. For example, people can deprive themselves in the present so as to profit from future payoffs that may never come, so being proactive about the future is essential to try to get the most out of the present.

All these relations between present and future are, however, fictitious. Even if there are past facts and present options, the future remains a possibility where no certain knowledge is available. It is this paradox that futurists aim to resolve: the need to know before the fact what is, in some sense, largely unknowable until after the fact. It is this gap that futurists attempt to fill with conjectural or surrogate knowledge. Futurists make contingent, corrigible, and approximate assertions about the future. However, they are conscious that these hypotheses can also be completely or partially false when the future becomes the present.

To support their research, they have adopted and invented a variety of methods. These practical techniques help futurists justify the reasons behind some particular assertions about the future. Also, many standard methods of research are used in futures studies, from sampling techniques and statistical analysis to data gathering, surveys, and participant observation. This set of methods supports futurists in obtaining an accurate and detailed description and analysis of past trends and initial conditions of the present. These results are used as a basis for both forecasting and designing the future.Developed methods support them not only in clearly stating *what was* and *what is*, but also in organizing these results to propose *what will be*, *what might be*, *what could be*, or *what ought to be*.

1.2
Scenario building and its relation to the future

Since the beginning of time, humankind has considered the future. As anticipated, in addition to the different actions and studies undertaken on the topic, the need for supporting tools arose naturally. Initially, tools from other fields were adopted, starting with tools of operations research, then systems analysis, and then strategy, before a dedicated sets of tools were finally developed. Practitioners need to integrate a rigorous method to orient action towards a desired future. Several tools have been produced and oriented to focus on different aspects, such as:

Structural analysis for identifying the key questions concerning the future.

Stakeholder analysis to identify the influence of various stakeholders and to establish the relationships amongst them, as well as the stakes involved.

Morphological analysis to identify the entire field of possibilities and to construct scenarios based on them.

Among these sets of tools, one of the most used in its field and then also adopted in the design field is represented by scenario building.

The name of this tool is obtained by the most common interpretation of the word *scenario*. This word is considered synonymous with vision: the *vision* of a hypothetical future.

In literature, different definitions and descriptions are adopted. Some argue that scenarios must outline possible futures, offering a wide range of options and stimulating thinking about the future. Others describe it as a depiction of a future situation, trying to present all the events which allow one to move forward from the current to the future situation. Also, it is defined as the representation of alternative futures resulting from a combination of trends and policies.

Delphi's Oracle

1.3

History of scenario techniques

The concept of scenarios in general comes from the past where in ancient times people were already interested in understanding the future. It was also used in past military actions.

Military strategists were familiar with adopting scenarios inside war game simulations. Those were elaborated to try to predict possible strategies and risks associated with both personal and enemies' future actions.

However, among all these different applications in history, the first documented reference of what we consider scenarios today is found in the 19th century. The source is presented by writings of Von Clausewitz and Von Moltke, two Prussian military strategists also credited with having first formulated the principles of strategic planning.

Systematic use of scenarios to support thinking about the future started after World War II. There is evidence that the Rand Corporation documented the use of scenarios in the 1950s as a method for military planning for the US Department of Defense. In 1960s, scenario methodology evolved and was used for social forecasting, public policy analysis, and decision making. After 1970, the technique made a move to the private sector and was used heavily at the corporate level of large companies. Scenarios were mostly used for long-term plans of ten years or more, and its users came from capital-intensive industries like aerospace, petroleum, etc.

Further research reveals that almost fifty percent (50%) of all US Fortune 1000 companies were actively using scenarios in the early 1980s. Thereafter, the method of scenario building was implemented and adopted on a massive scale. New meanings were associated with scenarios, employed to deal with the macro-scale of the socio-technical systems and to present a variety of possible futures in a wide range of sectors. Scenario planning stimulated strategic thinking and helped to overcome thinking limitations by creating multiple futures.

1

2

3
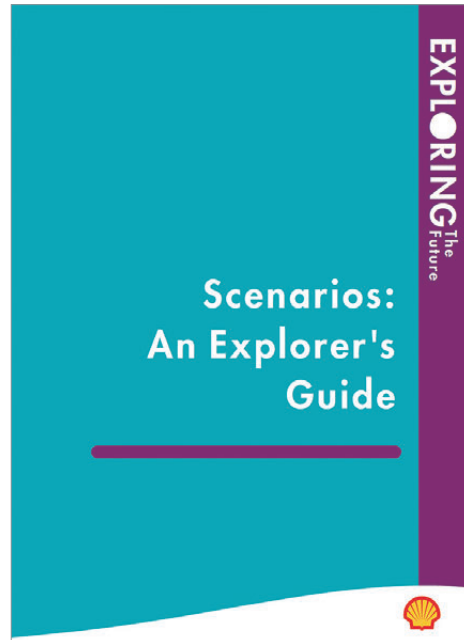
1.
Von Clausewitz

2.
Von Moltke

3.
Shell Report

2. Characteristics of Scenario Building

2.1
What form scenario takes

Scenario building is a tool that allows for the move from an information analysis phase to a pre-project trajectory proposal phase. A scenario is a synthetic representation of a set of pre-designed information and ideas on a specific theme used to develop guidelines for designing new products and services.

A scenario prefigures possible reference *worlds*, in terms of contexts and situations of use, user-product relations, meanings, and senses associated with the use of a product or service. In the scenario method, the objective is not to predict the future. The future is considered to be too uncertain. Instead, the objective of the scenario method is to explore the future by describing different possible future states.

While developing scenarios, it is necessary that two main aspects are included: a clear motivation and a practical issue. For the first, a clear explanation of what the scenario is aiming for is needed, while for the latter, it is important to include some concrete actions that need to be implemented to develop the scenario.

The scenario can be fully applied only if the company is able to consider options beyond the traditional operational and conceptual comfort zone. This process must exclude the possibility of limiting the development of future scenarios or avoid to excluding certain alternatives. The final result should be a representation of plausible futures, connected with actions to develop emerging opportunities, and starting from what needs to be implemented in the present.

2.2
How scenario is expressed and the importance of adopting it

The adoption and development of scenarios are not connected to a particular timeframe. However, they provide greater usefulness if developed for the long term. Although the scenario technique has been used for many decades, it is not possible to find a single approach to perform it. However, there are some common aspects among the different approaches. All emphasize defining the issues, identifying key drivers, stakeholders, trends, constraints, and other important issues.

The field of scenario methodologies is characterized by extremely varied approaches, terms, and definitions that have been developed over time and are documented in several streams of literature. As some scholars point out, this diversity can sometimes appear confusing, especially as similar terms are occasionally employed in relation to different approaches.

However, a synthesis of this varied landscape of theories allows us to identify three main schools or methodological approaches for scenario building: Intuitive Logics, Probabilistic Modified Trends (TIA, CIA), and the French school of La Prospective. The last two more heavily rely on probabilistic calculations and mathematical

Scenario variables
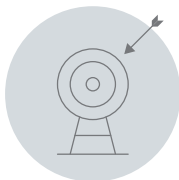
Focus Area
(Product, Technology, Enterprise, Industry, ...)

01

Geographical Scope
(Local, Regional, National, Continental, Global, ...)

02

Timeframe
(measured in years)

03

models, while the first relies on *disciplined intuition* and on the creation of plausible scenarios through qualitative methodologies. In this last case, quantitative data may be used to broaden the understanding of the context but is not employed to estimate the likelihood of a scenario or generate predictions.

The intuitive logics method appears to be the most commonly documented and also the most widespread in the business context, although it is also the most diverse in terms of the variety of approaches. Its approaches range from more informal applications to codified proprietary methods, particularly common amongst agencies who offer services in the field of futures studies. Scenario building can be a valuable tool to guide the design of new products and services and to help management define new launch strategies.

3. The Value of Scenario Building for a Technology Company

Innovation is ingrained in the DNA of a technology company and is by nature concerned with the future. However, innovation processes need time to take place, sometimes longer than expected. Also, the implementation of some concepts, from their ideation until the moment in which they arrive on the market, can require long periods. Sometimes, during the implementation phase, changes in technology, market, and/or society can take place. These unexpected shifts can both positively and negatively affect the outcome of innovation. Scenarios thereby represent a valuable way to cope with unpredictable changes and develop a view on the future.

The hypotheses on the future coming from this method can contribute to the creation of future strategies that can lead to possible adjustments. Researchers have also reported that there is a direct link between scenario planning activities and successful implementations of innovation inside companies. This further proves the importance of a future-oriented mindset that encourages people to invest time in researching the future and debating possibilities.

Scenario planning supports managers in making better decisions for the long term. Overall, it helps managers understand the dynamics of a business environment, recognize new possibilities, assess strategic options, and develop ideas for the future, supporting them in making better decisions in the long term.

Research shows how the adoption of scenario planning has increased significantly in the last decade. Moreover, the adoption of scenario planning techniques can help business environments overcome uncertainty, unpredictability, and instability.

Rising uncertainty has increased the importance of identifying future trends and expected changed in the business landscape. Scenarios can facilitate the identification of critical uncertainties that can transform the performance of a company. The technique helps us understand the limitations of our *mental maps* of the world—to think the unthinkable, anticipate the unknowable, and utilize both to make better strategic decisions.

4. Applying Scenario Building

The following section focuses on the presentation of a purely qualitative scenario-building methodology. This reflects some of the main steps documented in the literature, but also contains specific adaptations proposed by the authors leveraging their direct experience with the application of the method.

4.1

A qualitative approach to scenario building

"Scenario method offers one approach to understanding and analyzing seemingly intractable problems where there are 'critical uncertainties' that span a range of subject areas or disciplinary boundaries. It is an approach that is inclusive, rather than selective" (Wright & Cairns, 2011).

Qualitative scenario-building approaches lend themselves to a large variety of applications and offer valuable support

in the analysis of multifaceted and complex problems. Their starting point for a scenario is typically a project challenge or an area of concern which can be more or less broad. The methodology can be applied both to facilitate the exploration of possible future directions and to drive alignment and decision making.

Scenarios are not classified by their probability (nor is statistical probability a key concern in this methodology), but it is necessary to ensure that they are plausible, internally consistent, and built on a clear rationale and re-traceable logic. It can be said that the benefits of the scenario-building process tend to be even more important than the reliability of the output itself. Scenarios are an important tool in overcoming barriers to innovation and transformation within complex organizations.

4.2

Key characteristics

The process of scenario building is inherently diverging and the ultimate aim is to challenge business-as-usual from a number of different perspectives. However, the definition of a clear sequence of steps ensures that participants engaging in this activity are able to follow a specific path, without derailing or declining into chaos. Qualitative scenario techniques display some overarching common characteristics, which can be summarized as follows:

They are based on the analysis of the relevant context for the project challenge and they rely both on inductive and deductive thinking processes to perform such analysis. Scenario-building activities assume that knowledge is created collaboratively and that participants provide their own point of view on the problem and, most importantly, share their rationale with the rest of the group.

They are often developed through hands-on workshop sessions, a format that can facilitate knowledge exchange and alignment amongst participants. Activities may include secondary research, context analysis, subject-matter expert interviews, and group brainstorming.

In scenario-building sessions, the objective is to leverage the information gathered by the team to come up with sets of polar opposites, which help participants identify diverging and distinct future

George Wright
& George Cairns

Scenario
Thinking

Practical Approaches
to the Future
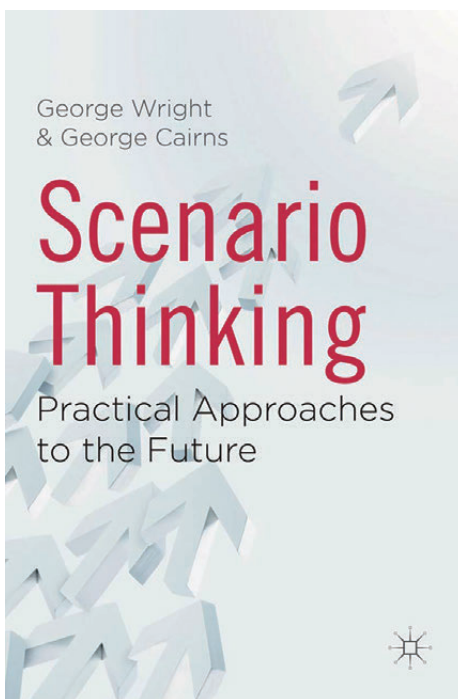
It is based on an analysis of the relevant context
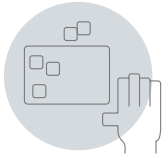
It is developed through hands-on activities
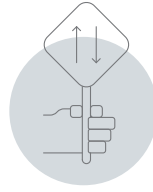
It is based on polar opposites and divergent options
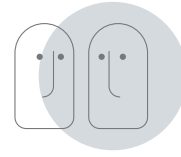
It involves key decision-makers in the process

scenarios. These polarities then take the form of a 2x2 matrix, in which each quadrant becomes a single scenario, presented in a descriptive form and often accompanied by photos and other visual contents to strengthen its narrative power.

Successful applications of scenario building are characterized by the involvement of key decision makers in the process, as this can result in quicker and more effective alignment. This also results in the possibility to incorporate strategic considerations in the early stages of scenario-creation activities. More specifically, best practices encourage companies to appoint internal teams to guarantee continuity and ongoing engagement, but also to involve subject-matter experts to support activities as needed.

Literature on the topic identifies three main components that should be embraced in each scenario:

Vision. It is the most specific component of the scenario. It answers the basic question: "How the

world will be like if ...?" The aim is to represent the context and what it is going to include, and to show how the context will change after the implementation of certain proposals. It is important to understand how products and services can impact and modify life.

Proposal. It is what gives a concrete form to a vision. It answers the question: "What has to be done to implement that vision?" It includes the representation of the products and services that comes from the scenario. The products and services need to be coherent with the developed vision and also to be feasible, in order to not propose something utopian.

Motivation. It is the component that makes sense of the scenario's existence. It answers the question: "Why is this scenario relevant?" It is composed of general and specific goals that implement the developed scenario.
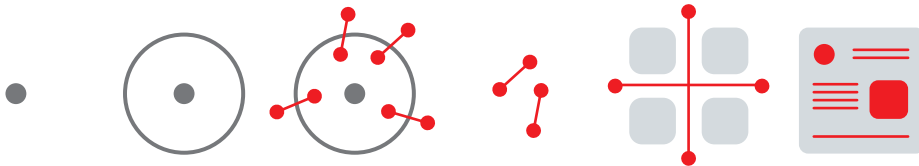
Defining the project challenge

01

Analyzing the context

02

Finding meaningful polarities

03

Choosing the most relevant variables

04

Designing a matrix of possible variables

05

Detailing out narrative scenarios

06

4.3

How to apply scenario building: a step-by-step process

Despite the large variety of methodologies and protocols for scenario building, it is possible to identify some common stages. In the following section, these six stages summarized below are explained through a practical example that is related to the creation of a new scenario for a retail organization.

1. Defining the project challenge

2. Analyzing the context

3. Finding meaningful polarities

4. Choosing the most relevant variables

5. Designing a matrix of possible scenarios

6. Fleshing out narrative scenarios

Step 1. Defining the project challenge

Defining the project challenge is a preparatory step: it involves identifying an area of concern that a specific group of stakeholders is interested in investigating and addressing. The challenge might take the form of a problem statement or a "How might we...?" question, and it is generally important to keep its framing quite broad to make the exercise most effective. At the same time, it is important and useful to capture the specific nuances of the problem and to gather lower-level challenges that belong to the selected overarching theme: stakeholder interviews may be used prior to this step in order to reach a crisp definition of the problem. During this phase, it is also important to define a time scale for the chosen issue, which may span a few or several years and may also vary depending on the industry and its pace.

Example:

A client organization with a retail presence (e.g., furniture or home decor industry) wants to transform their way of working store managers and employees. They wish to build a common vision and new processes and tools that can facilitate the exchange of communication between people but also to improve service delivery for their customers.

Step 1

How might we...

design digital solutions that can enable our workforce to work and collaborate better and to create more value for their customers?

They see the potential to leverage new technologies and AI in particular to achieve this goal, but they would like to make their solution future proof and to build a solid strategy. This focal issue may, for instance, be phrased as follows: "How might we design digital solutions that can enable our workforce to work and collaborate better and to create more value for their customers?"

Step 2. Analyzing the context and identifying driving forces (variables)

Analyzing the context means reflecting upon which driving forces (variables) might be influencing the selected challenge in the future and identifying relations between them. All participants in scenario-building activities should invest time to research the context under a number of different perspectives (political, social, economic, legal, technological, etc.) and to form an opinion around which forces may have the greatest impact. Here, the focus should be on contextual rather than internal or organizational factors. The subject of this contextual analysis might vary depe nding on the topic and on their relevance in relation to it. Best practices suggest running this activity first individually and then as a group to reduce bias and maximize the diversity of opinions.

Each contextual dimension can spark ideas around what the driving forces are: these should be expressed in a neutral way and never point to a specific outcome in order to allow the team to identify one polarity for each of them later on.

Example:

Given the nature of the challenge, it could be interesting to look, for instance, at social (user-related and employee-related), technological, and economic variables, which can impact the focal issue. An activity of secondary (and potentially primary) research related to these dimensions could yield interesting results and spark ideas around driving forces in this field. For example, secondary research might show that the role of a sales assistant is very likely to change in the future (due to technological transformations and the evolving role of physical retail stores), although the trajectory of this change isn't necessarily well defined. Other variables may, for instance, include the role of technology (AI in particular) in retail management. It could also include user-related aspects, such as the cultural significance of furniture or the change in the degree of people's mobility (how stable or nomadic people are).

Step 2

Role of sales assistants

Digitalization

Transparency

Working location

Access to information

Connectivity

Consumer trends

Future of work

Future of retail

Furniture trends

Low Tech ●————————— Digitalization —————————● High Tech

Located, private ●————————— Working location —————————● Mobile, shared

Always available ●————————— Access to information —————————● Contextual

Efficiency-focused
in-store experience ●————————— Role of sales assistants —————————● Advisory-focused
in-store experience

Remote presence
(eg. holograms) ●————————— Working location —————————● Remote customer
interactions

Step 3. Finding meaningful polarities

Each variable can be related to a set of different outcomes. In particular, this stage of the scenario-building activity requires participants to identify two possible opposite outcomes, which will constitute a pair of polar extremes, also identified as *polarity*. While going through this step, teams are encouraged to reflect upon what these two opposite outcomes might look like and even make a list of the characteristics of these scenarios.

Example:

All of the variables listed above are expressed in a neutral form (the *role*, the *extent*, the *degree*), leaving the door open for different interpretations and allowing for the definition of coupled polar opposites. For example, the role 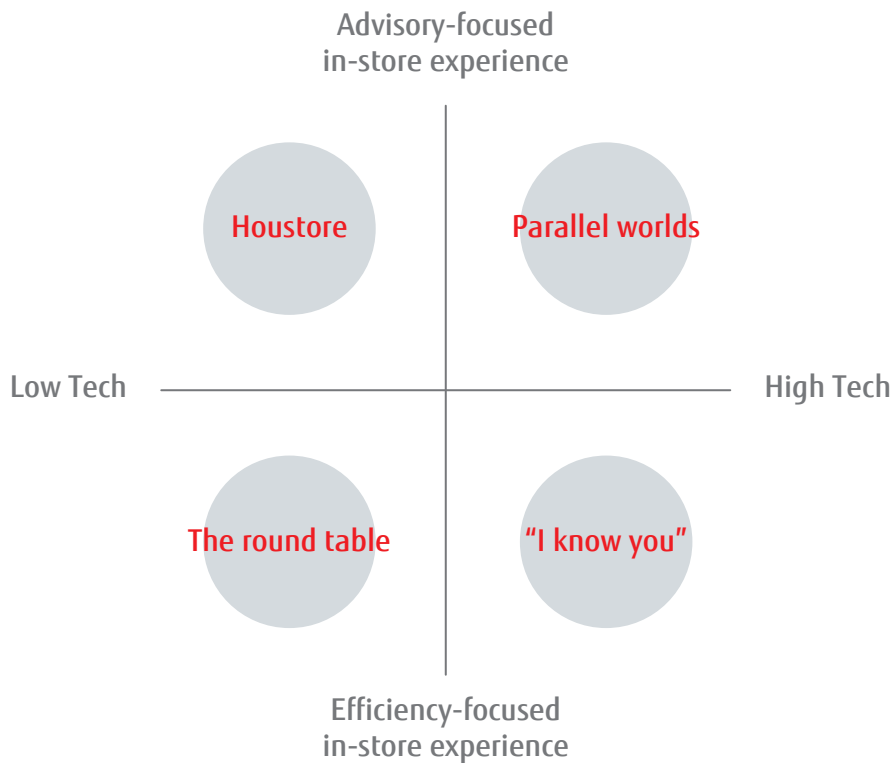of sales assistants could evolve in two opposite directions: on one side, they could increase their focus on ensuring visitors have a smooth, quick, and effective experience that brings them straight to their goal in the minimum possible time. On the other hand, they could increase the value they offer to store visitors, by facilitating an immersive experience focused on consultation and characterized by a slower pace.

Step 4. Choosing the most relevant variables

After each variable has been discussed and fleshed out by the team, participants are asked to prioritize variables by looking at two specific characteristics: their impact, meaning the extent to which they have the potential to affect the focal issue, and their degree of uncertainty, meaning the unpredictability of their effect on the focal issue. In scenario-building activities, the aim is to select those variables that have the highest degree of both relative impact and uncertainty and to identify two of these variables to plot them onto a 2x2 matrix. It is important to select variables that belong to different subjects (e.g., user context and economic context) and to avoid picking variables from the same bucket, as that would result in narrow and meaningless scenarios.

Example:

Not all the mentioned variables are equally interesting for the creation of future scenarios. The role of sales assistants is both quite impactful on the focal issue and quite uncertain and may be considered a good candidate for the final scenario matrix. Likewise, digitalization, here intended to mean the extent to which it will take hold in the

Advisory-focused
in-store experience

Houstore

Parallel worlds

Low Tech ——————————————— High Tech

The round table

"I know you"

Efficiency-focused
in-store experience

retail environment itself, could be interesting to analyze.

The process and the examples presented so far describe all of the fundamental steps of scenario building. Two more steps are needed to synthesize and consolidate the activity into tangible and shareable output.

Step 5. Designing a matrix of possible scenarios
The variables selected in the previous stage "are utilized for the production of four detailed scenarios, which are developed with a common temporal starting point, but end in four diverse, yet plausible, causally-unfolded end-states" (Wright & Derbyshire, 2016). The purpose of the matrix is in fact to provide an overview of distinct future scenarios, each characterized by a specific title and keywords that briefly summarize the characteristic of that specific future state.

Step 6. Fleshing out narrative scenarios
In essence, scenarios are narrative artifacts that depict a plausible future and, in order to use them as a tool to facilitate strategic conversations, it is important to present them in a clear and relatable form. For this

reason, scenario-building activities make extensive use of narrative elements and visualizations (e.g., illustrations or photographic images) to represent and exemplify a future situation. It is important to note that scenarios are not yet solutions. Rather, they are representations of contexts that can become fertile terrains for the implementation and adoption of new solutions.

4.4

Scenario building use

Scenarios are very useful artifacts when it comes to facilitating conversations amongst stakeholders and facilitating alignment and decision making in relation to a specific project or initiative. For this reason, the natural next steps of a scenario-building activity are:

The discussion of the strategic implications of the four scenarios and, potentially, the redefinition or reframing of the strategic objectives for the project.

The prioritization of a certain scenario over others to potentially help the team set strategic objectives and work towards a desired future state through a process of backcasting; and the ideation of solution concepts in relation to a prioritized scenario and their organization around a roadmap.

Scenario creation allows us to use and combine content stored in a knowledge repository; formalize the launch of a project and align goals and objectives among project team members; define project briefs analytically, detailing innovation trajectories shared between designers and management; and collect and organize material that can inspire innovation paths in the company.

4.5
Risks and shortcomings

Generally speaking, the downside of scenario building is mostly related to individual biases and the qualitative nature of the technique, which may be more or less successful largely depending on how rigorously the process is applied.

Possible shortcomings of this methodology include the risk of misinterpretation of what future developments in a certain field might look like. This is often due to certain topics receiving particular media attention in a specific moment in time and this may influence the perception of team members and the importance attributed to a single factor (Think of the impact that 9/11 had on people's lives and perceptions).

Another risk, often related to time constraints, is related to the extent to which each contextual dimension is analyzed in depth. If the level of detail is not sufficient, the team may end up performing a too-simplistic interpretation of reality or giving priority to other subjects that have received more extensive attention.

Example:
Associated Press and the future of the news industry
Associated Press (AP) partnered with Frog Design (stylized frog design) to look at the future of the news industry. The idea was to explore new opportunities to

Step 6

"I know you"

AI and other advanced technologies enable retail staff to deliver hyper personalized yet extremely efficient experiences, all the way from exploring to purchasing.

stay ahead of the competition and remain relevant in a market that has been particularly affected by the rise of digital channels.

The collaboration revolved around a set of futurecasting workshops, in which teams from different parts of the organization got together and analyzed the technological, socio-economic, regulatory, and cultural contexts, looking for signs of change and driving forces of transformation.

The output was four distinct and divergent (non-overlapping but potentially co-existing) future states:

1. Social media takes over as the main channels through which the consumption of news occurs.

2. Online advertising disappears and new business models are needed.

3. Smart devices and the Internet of Things truly shapes and influences the way we consume content.

4. Artificial Intelligence takes over human tasks related to news gathering, creation, and distribution.

As a result, this process enabled AP to take action more quickly and jump-start a set of projects informed by this activity, feeling more confident that the company would be better prepared to face future challenges and direct its growth.

KEYWORDS: recognition, human interaction, tailored communication and tone of voice, intelligent analytics, smooth employee to machine handovers, ...
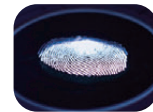
Key Takeaways

1. An Introduction to Futures Studies in Design

The discipline of **futures studies is concerned with maintaining or improving the welfare of humankind** and the life-sustaining capacities of Earth itself. It does this by systematically exploring alternative futures using prospective thinking or possible scenarios.

Scenario building is one of the most major tool among the various approaches in futures studies and have been adopted in design field.

The word **scenario is considered a synonym of vision**: the vision of a hypothetical future. The objective of scenario building is not to predict the future, but rather to envision potential future trajectories by interpreting the context, trends and signals.

Scenario techniques were first adopted in the military field as strategic tools, and started being adopted for wider practices including public policy analysis in 1960s. From 1970s, scenario methods became **popular in the business context**. Shell is regarded a pioneer in this field.

2. Characteristics of Scenario Building

The two key aspects that are considered when building a scenario are: having a clear motivation and objective for a scenario, and presenting concrete steps to achieve the scenario.

Scenario-building techniques are numerous and serve different purposes: **qualitative techniques are particularly interesting for exploratory scenario activities** aimed at mapping a variety of different future states.

3. The Value of Scenario Building for a Technology Company

Innovation is at the core of technology companies and therefore are inherently concerned with the future. In a rapidly changing environment, **scenario building offers companies the opportunity to think about future challenges and opportunities**.

Scenario building is also beneficial for management and decision-making. It helps companies and managers carefully consider their strategy and define where the business is going, **by intentionally choosing a direction**.

4. Applying Scenario Building

The process of scenario building can be summarized into six steps starting from definition of the project challenge to fleshing out narrative scenarios.

The output of scenario building is to create a set of scenarios (usually four). To define them, teams must identify the most impactful and uncertain variables, express them in the form of polar opposites, and plot them onto a **2x2 matrix** to generate four distinct and divergent future states.

Each scenario is generally expressed in narrative form, through images, illustrations, and text in order to make it understandable and relatable. Scenarios are not concepts: rather, they depict a context in which a new concept might exist.