Future of cities

Scenarios that show how people may experience cities in 2035

A publication of Philips Lighting Research

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of cities

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Foreword

We are living in the century of the city. According to the United Nations Population Fund, more than half the world's population has been living in towns and cities as of 2008. Civic leaders and communities around the world are facing today's toughest challenges, from growing populations and constrained natural resources to aging infrastructure and the safety and prosperity of neighborhoods. What happens when unexpected trends impact city dynamics?

Urbanism enjoys a long tradition of thinking about the future form and dynamics of cities, from the architects and artists of Renaissance Italy, who imagined ideal cities, to experimental architects such as Archigram, who envisioned machine-like walking structures for mobile cities in the 1960s. These visions include extrapolations about a variety of social, environmental, and economic changes and trends. But because they do not explicitly address the drivers of change, it's up to the "user" to interpret them.

Scenario planning is an analytical method designed to handle uncertainty. Rather than generating a holistic view of the future, scenario planning describes the extreme end-points that the drivers of today's trends might reach. Because it challenges participants in unexpected ways, scenario planning can be extremely fruitful for informing strategic planning.

As the public sector enters a new era of connected infrastructures and technologies, including connected lighting, thinking about the future of cities is essential. The convergence of digital LED light sources, the proliferation of mobile devices, the exponential growth of data, and the miniaturization of information and communications technologies creates a broad set of new opportunities and challenges. The scenarios included in this report offer different perspectives on these challenges and can help you prepare for them, while also anticipating new opportunities that are starting to appear on the horizon.

This report outlines extreme yet plausible future scenarios that you can use to challenge current-day assumptions and actions. The scenarios are the result of extensive interviews with experts, explorations of contextual material, trend analysis, workshops, and writing.

Lighting has a profound effect on the character and identity of a city, in much the same way that it conditions the atmosphere and mood in a private home. How can cities design connected public lighting systems and other smart city infrastructures to best prepare for the future? What priorities should they set? How will changing relationships among citizens, businesses, and city leaders affect the lighting industry?

I hope you will keep these questions in mind as you discover the scenarios outlined in this book. We look forward to engaging with you in an exciting dialog about the issues that the scenarios raise. Happy reading!

Andreas Knobloch

Head of Public Segment ad interim
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"Cities should be inspired to consider various **potential futures** and create their own city scenarios. Cities can only predict and prepare for the future by **cross-linking** and **involving** all relevant departments, and citizens."

**Kees van der Klauw,
Head of Philips Lighting Research**

By **stretching** our thinking, scenario planning helps us spend more time discussing **change** and future uncertainty in the business landscape. This in turn helps us better **prepare**, tackle, embrace, and even enjoy changes when they happen.

Introduction

Discussions about the future often turn into interesting debates that frequently end with the statement, "Only time will tell." Once the discussion is over, we return to our lives and spend most of our time concentrating on the present. The present allows us to see and feel what we're working on. The future, in contrast, is the field of possibility, uncertainty, and intangibility. Although the future is challenging, we can prepare for it and strengthen our ability to cope with its uncertainties.

Scenario planning is a method for exploring plausible future scenarios. While no scenario is either right or wrong, some of the more extreme views can make us uncomfortable when they challenge our preconceived notions and assumptions. By stretching our thinking, scenario planning helps us spend more time discussing change and future uncertainty in the business landscape. This in turn helps us better prepare, tackle, embrace, and even enjoy changes when they happen.

This book is the culmination of a journey taken by the scenario planning team at Philips Lighting to explore how

we might experience cities in the future. It explores four scenarios that take place in the year 2035, in a region very much like Europe.

These scenarios result from extensive research, discussions, interviews with experts around the globe from different backgrounds, and workshops with teams across our organization. They have helped to create an understanding of the ongoing global (mega)trends in various domains, and to identify the forces driving these trends. In some cases, it is highly uncertain what impact these forces will have on the way we experience cities in the future.

The driving forces that we focus on in this report are the most interesting for scenario planning because they may cause sudden, unexpected, and significant changes across the globe. Taking the significant differences between geographical regions into account, we have initially focused on a European perspective to translate the impact of the drivers we have identified into narratives. Perspectives on North America and other regions should emerge as part of the using phase.

The alternative futures presented here offer a glimpse of how the changes happening around us could manifest in 2035. Although the work was initiated by a request from the Public Lighting business group at Philips Lighting, the questions addressed by the scenario planning activity were much more general. Scenario planning looks at a large contextual environment independent of the Philips Lighting business. This helps us to understand uncertainties and areas of change that we cannot influence but that in due course may affect us.

The scenarios do not focus on a specific element in a domain, such as lighting, but rather envision how we may experience future cities in general.

Once a set of scenarios has been created, we use them to challenge our preconceptions about the future of cities. For example, we take a scenario and ask ourselves, "How effectively does our strategy address this? What would this mean for our company, our products, our partners and customers?"

These scenarios are intended to be used as a tool to question assumptions and prejudices about the future within your organization, and to encourage debate about the future and your preparations for it. If you would like assistance in using these scenarios, or if you want to know more about scenario planning, please contact one of the authors. We hope that you enjoy using these scenarios with your teams as much we enjoyed creating them.

What are scenarios?

Effective scenarios have three key characteristics:

Scenarios are stories about the future. Rather than playful science fiction writing, these scenarios are the result of a team process designed to analyze the uncertain but important trends and drivers that influence economics, social norms, culture, and the environment.

The scenarios presented here are not predictions. Predictions would require us to speculate on a single point of view, since only one future can occur. Instead, the value of scenario planning lies in the exploration of multiple possibilities regarding how the future might unfold. Investigating the myriad ways in which the world may change and challenging our assumptions about how the world works today makes for a more purposeful and useful exercise than a single prediction.

Plausibility

Without an understanding of the underlying forces governing the way the world appears to work, scenarios would not be plausible. Nevertheless, a plausible scenario may seem unlikely or extreme, as the world is surprising and the unexpected often occurs. Shocking scenarios can open readers' eyes to alternative perspectives and viewpoints.

Depth and context

Scenarios should be grounded in the dynamics of how the world works and what drives change. Our world often pivots around certain social mechanisms, which the scenarios should acknowledge. Of course, new and unexpected mechanisms are possible, but the transition from one mechanism to another must be explained.

World or domain view

Good scenarios do not focus explicitly on a single topic. For example, a good scenario could describe how city experiences may change over the next 15 years without focusing exclusively on how connected lighting may change or where or how to purchase it. The rationale for describing possible futures in this "macro" way is to identify the main sources of uncertainty that may drive fundamental shifts in the domain. A focus on "micro" detail may never disclose these uncertainties. Details about lighting or the changing business landscape can be inferred from the scenarios during team discussions in later exercises.

Driving forces

The four scenarios center on the interaction of two driving forces. A driving force is a form of pressure that influences a domain. Forces can be long-lived, but they manifest in the short term as trends that come and go. In scenario planning, we seek the most impactful and uncertain driving forces, as they are more likely to be the sources of future change and challenges than phenomena that are familiar and understood.

Participants in the scenario planning exercise identified the following two driving forces as the most uncertain and important:

Access to information

We live in a 24/7, always-on culture. The dynamics of our digital world empower citizens and businesses to access information that has traditionally been available only to privileged stakeholders. With the abundance of accessible information, citizens are enabled to shape decisions, while others need to be guided. Companies such as Under Armour and Airbnb are using this driving force to implement successful, disruptive business models. Under Armour's acquisition of MapMyRun (Glass, 2013) allows the company to use data about people's exercise habits to more effectively market athletic apparel and equipment.

Civic leaders may find it harder to keep pace with this evolving trend. How will cities respond? How will this new dynamic impact the relationship between citizens, businesses, and city leaders? How will the dynamic influence the emotional ties between people and their cities? Will people want to stay in their cities, with heightened incentives to help shape them and initiate new partnership models? Or will they be completely disengaged from city challenges and focus only on their own needs?

Adapting to rapid change

People have always been wary of change because unpredictable consequences foster a sense of uncertainty and insecurity. The acceleration of changes occurring today results in a complex environment. Sudden changes, such as the recent waves of immigration and the rapid advancements in information and communication technologies, flood our daily lives with increasing levels of information and uncertainty. Where will we feel the impact of these changes the most? How will businesses and city authorities address these changes? Will they lose or restore citizens' trust in society and its institutions? Who will broker access to resources and opportunities? How will social interactions across race, class, and education change? Who will be in the driver's seat and who will follow?
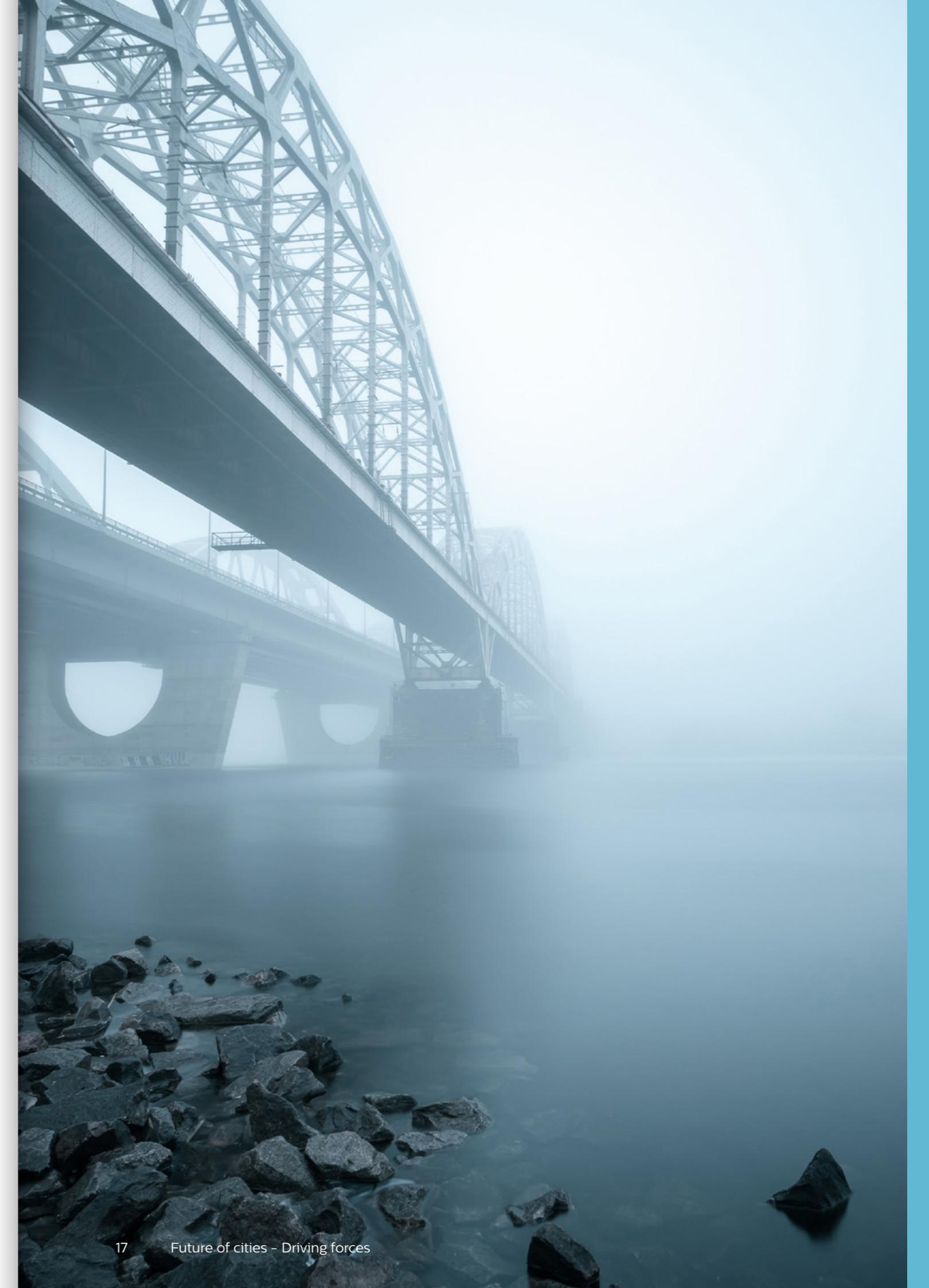
Other contributing driving forces

In addition to the two main driving forces, other contributing driving forces emerged in the workshops. Each of these additional forces brings a level of uncertainty. Because they are significant when thinking about how we may experience cities in the future, some have been interwoven into the four scenarios. We encourage you to discover how these driving forces could play out in the different scenarios. One trend—increasing technological developments and availability—could affect the future in different ways. Because it plays a role throughout, it is not listed separately.

Social inclusion or conflict?

Urbanization and globalization lead to a mix of cultures in growing cities. Migration from war-stricken or resource-limited countries further contributes to this phenomenon. Demographic differences between social groups, such as education, income, and age, increase, as do psychographic difference, such as values, interests, and lifestyle. Examples of conflict resulting from these differences include the recent anti-tourism marches spreading across Europe (Coldwell, 2017), or protests against welcoming refugees into the country (Paterson, 2016). Growing differences increase concerns about security and safety, available resources, and potential conflicts and frustrations.

Will neighborhoods have to institute strict border controls, like little nations? How will security threats vary from city to city, and how will cities respond? How can cities promote engagement across social groups? What if people don't feel safe enough to venture out onto the streets, and instead adopt fully indoor lifestyles? Will these issues be addressed at the national, municipal, community, or personal level?

Interaction and engagement

People are spending an increasing amount of time online. Virtual interactions via social media, online gaming, dating apps, community forums, live streaming, messaging/SMS, and so on are changing social relationships around the world. Some local communities are taking it upon themselves to solve their own issues. Local neighborhoods in cities such as Tilburg and Lijnden in the Netherlands (gkidd, 2015) (Zetterlund, 2016) have been using WhatsApp to create neighborhood watch groups and enhance public safety. In contrast, the Independent reports on the so-called "hikikomori" phenomenon, in which young Japanese people shun society and barely leave their homes (Agerholm, 2016). Business interactions, such as meetings and shopping, also move to the virtual world, further limiting occasions for face-to-face interaction.

As co-location is no longer necessary to create a sense of belonging, what other factors will determine citizens' engagement with each other and their cities? Will people be satisfied with remote interactions with like-minded peers, or will they prefer their next-door neighbors? If citizens go beyond personal needs and leverage global connections to solve city issues, what might a new partnership between cities and global communities look like?

Sustainability and resources

Increasing consumption and urbanization make resource availability an important topic for cities. Resources that are in abundance today, can become increasingly scarce and expensive in the future. For example, how will cities ensure access to clean water?

The New Scientist reports that from the 1950s to the 1980s, the groundwater in the city of Bangkok was removed too fast resulting in a sinking city. One way the government of Thailand tackled this subsidence was by raising the taxes on groundwater usage to 42-dollar cent per cubic meter, which is comparable to three dollars for a shower and six dollars for a bath (Syvitski & Higgins, 2012). However, the Bangkok Post reports that the city of Bangkok is still at risk of submerging within two decades due to rising sea level, excessive use of groundwater pumping, and building construction (Sattaburuth, 2015).

How will cities ensure a sustainable future, taking environmental, social, and economic factors into account? Will cities take a proactive or a reactive approach to resource planning? Will cities partner to share insights and knowledge, or will they become more isolationist? Will citizens take the initiative to address resource scarcity? Will cities train citizens to guarantee a sustainable and efficient workforce? Or will cities depend on efficiency drivers to reduce costs, with citizens as clients and subscribers?

Personal data

Big data and the Internet of Things are today's buzzwords. But while these terms might drop out of use, the fact that data has enormous value is indisputable. Due to the ease of data collection, the amount of information available is ever increasing. Consumers already use applications and services that encourage them to trade personal information for incentives–for example, loyalty programs (WebpageFX, 2015) (WebpageFX, 2017). Companies and data brokers take this further by leveraging the willingness of consumers to do so by offering personalized services, as in driver telematics (Drive like a girl, 2017) or personalized coaching (Philips, 2017).

Will people exploit the value of their personal data only for their own benefit, or will they also use it for the greater good? The entity that controls access to aggregated personal data will have the power. Will this entity be a company, a municipality, a not-for-profit organization, or the people themselves? Will cities put strict data security measures in place to earn and retain citizens' trust? What happens if people sabotage data collection and refuse to share their personal information to protect their rights and privacy?

The subscription economy

Owning or leasing designer jeans? Buying or renting a property, or just looking at what's available?

Attitudes about ownership and attachment differ from culture to culture and generation to generation, and these attitudes are changing. Some municipalities, such as London, have given up ownership of public spaces (Shenker, 2017).

Ownership is often considered a personal asset and a source of pride. However, ownership can also be perceived as a responsibility, a personal or ecological burden. Leasing and sharing assets may offer fewer ties and hassles. Yet they also pose risks, as the recent troubles with Airbnb show (BBC, 2017). Services provide freedom, although sometimes at a price.

How will cities change when people are no longer tied to property? Will municipalities and citizens feel the responsibility to act when things go wrong? The digital world enables new business models and asset sharing, as with Peerby and Uber. Who will be responsible for managing the new digital ecosystem to ensure transparency and quality?

Synopsis of the four scenarios

Our world is full of changes and disruptions, Businesses have to adapt to change quickly, scout for new opportunities, and seize them effectively.

The way we interpret and experience situations depends on the accumulation of our daily experiences: our cultural environment, our education, our circle of family, friends, and colleagues. Since we only have limited time, framing is an important strategy. As Ramirez et al. argue, frames are helpful to focus and shape attention (Ramirez, et al.,2013). They offer clarity on which events and signals we need to attend to and act upon, and which are less important. But framing also poses a threat when we become deeply attached to one dominant frame—"We've always done it this way," or "No, of course not, that will never happen to us."

To challenge us and ensure that our dominant frames do not become static, scenario planning offers multiple plausible views of the world (Ramirez, et al.,2013), allowing us to reframe and update our mindsets.

To assist us in reframing the future of cities, the four scenarios describing how we might experience cities in 2035 center on two main driving forces. The first is access to information, and the second is consequences of rapid change. The structure of the four scenarios results from the interaction of these forces.

The following synopsis offer a high-level glimpse of the four scenarios. We invite you to consider how these views match or oppose your own views on the future. Bear in mind that there are no right or wrong answers. and that the scenarios are not predictions even though they are plausible.

The seeds of the future are already visible today. Next to each scenario, we describe the seeds from which the drivers grow, demonstrating their influence today while leaving room to imagine how they might create bridges to the future. By offering extreme views, we aim to stretch thinking and challenge assumptions. This approach is supported by Shoemaker (1993), who argues that scenarios are a unique approach to deal with complex and uncertain environments, and to help overcome corporate blind spots.

Scenario 1
Fablab

Municipalities work hard to provide basic infrastructures, while citizens take the lead in realizing their own local and virtual community experience. Citizens are attached to their global communities, not necessarily to the cities in which they live. People who belong to these global "families" share values and build crucial knowledge-sharing and competency networks. Flexible, fast, and smart, such communities succeed in addressing members' changing needs. Outpacing the speed of the municipality, communities team up with innovative businesses. Businesses have local presence in the community and use communities as carriers for innovation.

Seeds – Fablab

People take ownership to realize infrastructure and experience without waiting or against the intentions of the authorities.

Citizens take infrastructure construction and maintenance into their own hands, as authorities are not acting or are too slow to act. In two very different settings—Panama and the US—citizens organized to build their own bridges to create access to vital resources, such as medical care and transportation.
https://panampost.com/sabrina-martin/2016/06/30/brazilian-residents-build-bridge-that-costs-54-times-less-than-mayors-proposal/

People around the world are contributing to road safety by adding traffic signage themselves. Traffic signage vigilantism includes painting or better marking of cycling lanes, erecting signage for better wayfinding in tricky locations, and creating no-parking zones to reduce the danger of turns in narrow streets.
http://www.atlasobscura.com/articles/traffic-vigilante-homemade-parking-lines

While some jurisdictions limit internet access, activists find workarounds to make restricted information available. Citizens caused an uproar and hackers launched attacks when authorities in Russia, Thailand, and China attempted to pass laws and take actions that could lead to or reinforce online censorship.
https://sinosphere.blogs.nytimes.com/2015/03/20/hackers-attack-greatfire-org-a-workaround-for-websites-censored-in-china/
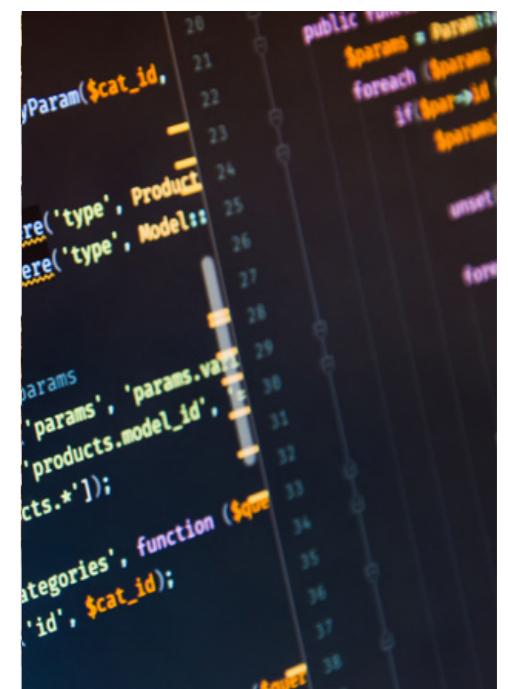
Scenario 2
Sandbox

Citizens are in the lead, enabled and coordinated by the municipality as their primary partner. With the municipality's trust, citizens can create their own environment within the city. Citizens strive for user-centric innovation, and use the services of local businesses to improve city livability and experience. Municipalities facilitate the connections between different citizen-run services and initiatives. Cities are eclectic environments that offer a multitude of different experiences. Citizens are attached to their cities and want to contribute to them and improve them, so they are less likely to relocate.

With the municipality's trust, citizens can create their own environment within the city. Citizens strive for user-centric innovation, and use the services of local businesses to improve city livability and experience.

Seeds – Sandbox

Authorities motivate and support citizens to realize solutions to improve communities and experiences.

Given the chance and the means, citizens are already contributing to city experiences, from beautification to supporting community shops, restaurants, and bars. In New York City, a community initiative, with the support of different public funds, re-established a community garden to give local residents access to affordable fresh food. Organized place-making movements around the world help improve the community experience.
https://www.pps.org/
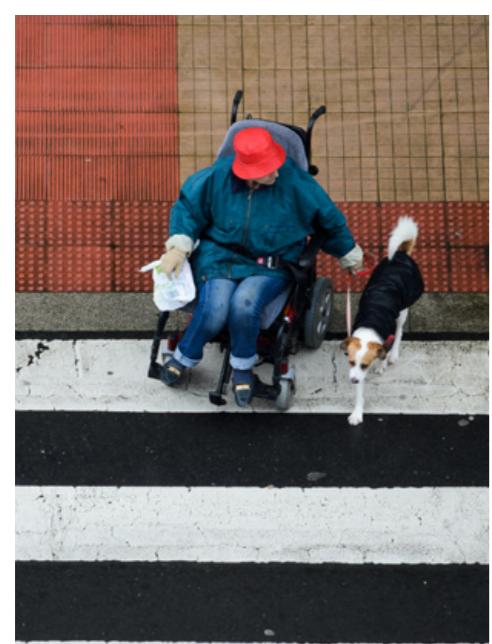
In some cities, citizens shape the city experience through new digital means. In a pilot test in the Netherlands, people with reduced mobility can use a smartphone app to extend green phase duration at pedestrian crossings. Cyclists can use a smart e-bike solution to generate energy and collect information for the city as they cycle around town.
https://www.weforum.org/agenda/2015/11/which-cities-are-adopting-smart-technology/

Rather than dictating citizen engagement, authorities and organizations inspire citizens to realize solutions that will improve their lives. Inspiration could come in the form of awards for realizing community health improvements, or meals for unemployed and homeless people in exchange for work in restaurants or as city guides.
https://news.aetna.com/2016/11/sixteen-communities-work-to-increase-physical-activity-access-to-healthy-food/

Scenario 3
Resort

With personalized recommendations for leisure, education, work, and lifestyle, city municipalities offer citizens highly regulated and guided city experiences. To keep pace with citizens' desires, municipalities work hard to maintain city quality standards. With the needs and desires of citizens in mind, municipalities regulate and steer the city's business landscape using a municipal approval process, which can create challenges for corporations operating within the city limits. By supporting approved companies, municipalities create a balanced business ecosystem that citizens can enjoy and trust.

Seeds – Resort

People are guided and facilitated in their choices regarding work and daily lifestyle.

People want personalized recommendations, even though all of the consequences of doing so are not clear. Personalization has already taken over online news, searches, and shopping, but it does not stop there. Apps are now starting to offer people ways to optimize their daily schedules and realize their personal goals.
http://www.digitalnewsreport.org/essays/2016/people-want-personalised-recommendations/

While going about their daily routines, people look for ideal conditions that automatically take care of their day-to-day needs. Real estate service companies typically manage office space for large corporations. However, entrepreneurs and small business can also make use of well-serviced working spaces. Community managers make sure the needs of members are addressed by optimizing the office space and by organizing courses, informal get-togethers, and other social events.
https://www.wework.com/creator/work-life-balance/for-weworks-adam-wacenske-its-about-making-connections/

Scenario 4
Campsite

A few major platform providers are in the lead and brand the city experience through service offerings. Public spaces and city infrastructures are corporate-owned. Cities team up with local and global partners to provide unique urban experiences. Global plug-and-play services allow people to live nomadic lifestyles. Bound only to a platform and its provider, citizens are unattached to any particular city. These digital nomads follow their dreams and desires, moving easily and quickly from one city experience to the next.

Global plug-and-play services allow people to live nomadic lifestyles. Bound only to a **platform** and its provider, citizens are **unattached** to any particular city. These digital nomads follow their **dreams** and desires, moving easily and quickly from one city **experience** to the next.

GREEN CITY

FUN CITY

SAFETY CITY

Ready for a new city experience?

GOOD FOOD CHEAP RENT

VEGGIE MEALS

ALL-INCLUSIVE NET & VR

DELIVERY

DELIVERY
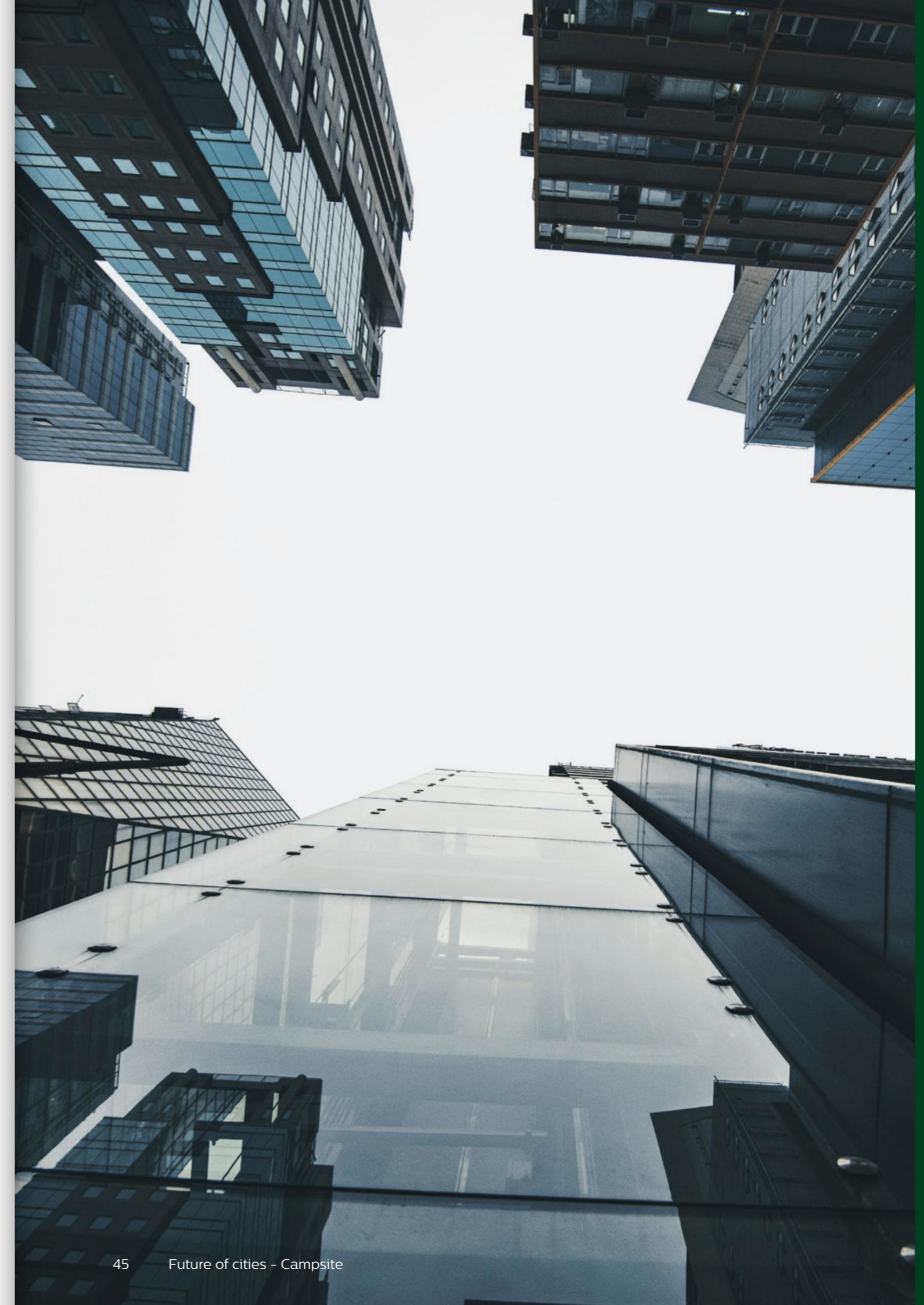
Seeds – Campsite

As different places offer different benefits in both the physical and virtual worlds, people adopt new lifestyles with unexpected consequences.

You no longer have to take a year off after you finish your education, or a sabbatical from work, to tour the world and explore other cultures. An increasing number of professionals have become digital nomads, expats, or global commuters. Transition to this sort of working style can be triggered by political events such as elections, Brexit, company decisions to relocate, or the simple curiosity to explore. Entrepreneurs and professionals can take advantage of programs that offer organized travel around the world to experience different cities, as long as the proper infrastructure and network are available to allow them to continue working remotely. As technology advances—for example, with proposed high-speed transportations hyperloops—people could commute longer distances between a desired working place and an affordable residential area.
https://www.remoteyear.com/
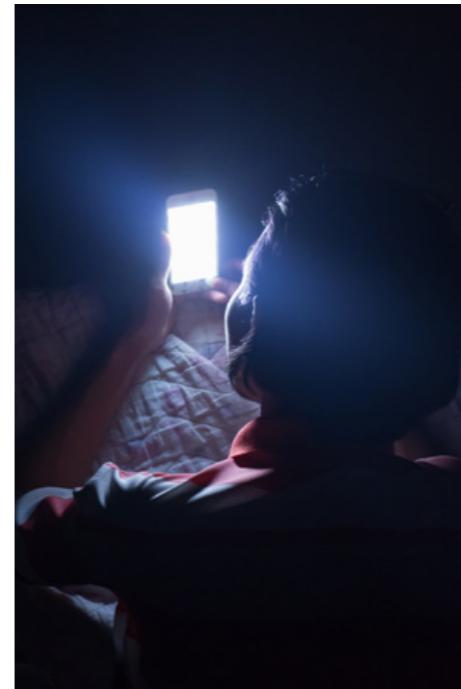
The digital world inspires new lifestyles, but with all of the entertainment and possibilities for interaction available online, isolation is becoming an increasingly common social issue. Isolation gives rise to problems such as loneliness, lack of interpersonal skills, and difficulty developing intimate relationships with friends and life partners.
http://www.independent.co.uk/news/world/asia/youngW-people-japan-hikikomori-anxiety-a7329396.html

In some cities, large corporations dominate the city experience. Opening a new office or moving the headquarters to a new city brings benefits, such as new jobs. However, moves often increase rents, and large high-street chains can have a destructive impact on the economic ecosystem of small local retail shops. Losing the original city character is a negative side effect of gentrification. When a city loses its soul, people can take to the streets to voice their concerns.
http://www.atlasobscura.com/articles/ghosts-seattle-past-book-gentrification

Scenarios diagram

Fablab

- Self sustaining global communities shape the living environment of cities
- Communities reach out to corporates as a carrier for innovation
- People form new communities and take reponsibility to help each other to solve issues
- People are becoming more self-sustaining with off-grid solutions
- Increased bottom-up adoption of open and decentralised systems
- Majority of people change location often
- Confidence in municipality is declining
- Like minded people form the new family
- Communities are the new family
- Global collaboration and learning communities are the new family

Campsite

- Subscribers of city platforms are able to move freely from city to city enjoying the nomadic lifestyle to the fullest
- Citizens subscribe to corporate city services
- Citizens transform in corporate platform subscribers
- Citizens choose their city based on brands they best identify with
- Corporates offer global city experiences by linking their cities to one platform
- City branding is taken over by corporates
- Corporates offer services, infrastructure and public spaces to private sector
- Corporates offer global city experiences
- Cities outsource city services, infrastructure and public spaces to private sector
- Growing escapism
- Municipality orchestrates the city experience

Today (centre)

- People want pleasure and purpose in life
- Citizens pay taxes and municipalities take care of public serrvices
- Municipalities take care of public serrvices
- Mega-cities on rise
- Municipalities struggle to finance and moderate public services
- Financial crisis
- New standards define economic value, water is the new Gold
- Lack of resources, city struggles to provide
- High inequality
- Lots of unemployment, people team-up to solve city issues
- Increase of automated services and AI
- Maker movement and sharing economy get a boost
- People have an abundance of free time
- People seek for change to assure, gain financial security

Resrot

- Municipality regulates private sector to adhere to city identity
- Citizens entrust municipality to manage and protect their data for the greater good of the city
- Citizens enjoy personalized citizens perks of recommendations and care-free city experiences
- Citizens enjoy personalized city experience
- Maintanance and software services breakdown in city servies
- Cities take back control over services
- Citizens entrust municipality to manage and protect their data for the greater good of the city

Sandbox

- Cities are lifelong-learning centres with equal opportunities for their citizens
- Municipalities plan ahead, facilitate by giving directions to address needs
- Municipalities take up the role of developing their citizens according to city needs
- Citizens entrust municipality to manage and protect their data to shape the living environment
- Municipalities decentralize because they trust citizens to shape the living environment
- Loyal citizens and municipalities team-up to solve city issues

2035

Using the scenarios

Scenario planning is an insightful and enjoyable methodology designed to help teams produce scenarios. Scenarios are tools that help us think about how the future may change, and to challenge assumptions we may have about the world around us.

Using scenarios is often an enjoyable and eye-opening experience, encouraging debate and engaging discussions. If you want to use these (or other) scenarios but would like some advice or assistance, you are welcome to contact the authors, who will be happy to help.

Teams can take the following simple steps to apply scenario thinking to their work.

Discussions

Discuss the scenarios, allowing each person to make his or her own observations and raise questions. This enlightening exercise can reveal assumptions or ideas about how and where people presume the world is going. Discussions around plausibility or what may need to happen for a scenario to occur can help to challenge people's assumptions about how the world or domain may change.

Implications

Scenario discussions inevitably turn to what an alternative future may mean for us and our business, and how it may change the business landscape around us. Searching for implications is fundamental to the process of identifying the opportunities or threats that future scenarios might bring. It can be interesting to compare the differing implications of several scenarios.

Brainstorming

Thinking about how our lives may need to change to dwell agreeably in different futures is a key way of using a set of scenarios. The list of implications can be used as focal points for brainstorming sessions to generate ideas about how to avoid threats or make the most of opportunities.

Strategy

Scenario planning was originally a strategic planning method in which strategists would use scenarios to explore various possible business directions. Collecting implications and ideas from brainstorming sessions can be useful input for developing strategic options. Strategic options from the present into the future can be devised for each scenario, then compared to identify similarities and differences. Comparisons can help to uncover the more generic actions that may need to be taken regardless of which future may unfold. Comparisons can also help to generate alternative options for how the business may need to change in the near term or the long term.

Wind-tunneling strategy

Strategic planning is an ongoing activity, and businesses are likely to have an existing strategic plan that they intend to follow. Scenarios are useful as alternative future views for wind-tunneling the strategy in multiple different global situations. Stress-testing a strategy can uncover its weaker aspects when it is examined in the light of potential uncertainties and sources of change. A strategic plan may show great potential for success in one scenario but may be much less effective in another. With wind-tunneling, strategists can adjust their plans to help better prepare for what might happen.

Early warnings signals

When you're working with scenarios, you may start to read the news differently. Once you're familiar with a set of scenarios, events that occur in the world around you that are akin to topics in the scenarios appear to jump out at you. This strange phenomenon makes it possible to identify early warning signals that indicate which type of future may be unfolding. Some teams prepare a list of key early warning signals to actively monitor; when any are spotted, teams return to their strategy to check whether adjustments need to be made.

Using scenarios is often an enjoyable and **eye-opening** experience, encouraging **debate** and engaging **discussions**.

Process

General introduction

The scenario planning method that Philips Lighting uses is the Oxford Scenario Process, endorsed by the University of Oxford (Ramirez & Wilkinson, 2016). This process identifies several stages that a scenario planning team should complete when creating a set of scenarios.

Desk Research

A scenario planning exercise begins with a comprehensive literature search. The team must understand what has happened, what is happening, and what is changing in the domain of interest. The search for information should cover news articles, blogs, trend reports, journals, books, presentations, interviews, and so forth. The research is domain-focused and should reach farther than the initial point of interest (for example, city lighting in the case of the scenarios presented in this report). The team should explore demographics, social/lifestyle, economics, natural resources, physical environment, politics/regulations, technology, international relations, market forces, competition, ethics/morals, and so on. Broad input helps to make connections among topics which at first may not appear obvious.

The team must **understand** what has happened, what is happening, and what is changing in the domain of interest. The research should reach farther than the initial point of interest. Broad **input** helps to make **connections** among topics which at first may not appear obvious.

Workshops: top trends and driving forces

Scenario planning exercises are organized around two key workshops to which people from a diverse range of disciplines are invited, ensuring that multiple perspectives and experiences are represented. This helps to avoid groupthink and prejudice. The first workshop is an open exploration of the desk research and the identification of trends influencing the domain. The second workshop involves lively debate and discussion of the trends identified in the first workshop. Participants are actively encouraged to voice their genuine opinions, challenge thinking, highlight assumptions, and question viewpoints. The aim is to determine which of the trends are the most important and impactful.

The next step is to identify the drivers behind the trends: what is causing them to appear? The driving forces are evaluated to determine their importance in the domain and the uncertainty of their future impact. Scenario planning explores uncertainty to identify sources of unexpected change, but it also involves identifying (and questioning) the ground rules that makes the domain function, and identifying which of the more certain driving forces will likely continue to exert influence in the future.

The most **uncertain** and important driving forces become the main source of **inspiration** for the scenario plotlines. Plotlines are created by imagining **extreme** situations for each driving force and combining them.

Interviews: thought leader insights and validation

Via interviews, the perspectives and insights of experts and thought leaders are integrated into the process. The perspectives of experts with diverse backgrounds and professions are included to enrich the scenarios. Interviews are planned in two phases of the process: as part of the desk research, and as a validation tool.

By asking direct and philosophical questions, the team tries to understand domains from expert perspectives. What do the experts consider to be the game-changers in their domains? What has surprised them in the past? What excites them or keeps them up at night?

At a later stage of the process, interviews are used to validate that the selected driving forces are important and uncertain in the domain. New and follow-up interviews are held with thought leaders to explore their views on the driving forces within the domain under consideration. What do experts consider to be most important and uncertain forces? How could these forces affect the domain? What could plausibly happen?

Scenario building

The most uncertain and important driving forces become the main source of inspiration for the scenario plotlines. Plotlines are created by imagining extreme situations for each driving force and combining them. For example, access to information can enable citizens to shape their city experiences, while others need to be guided. Considering these two extremes together may push our thinking beyond the obvious.

A story can then be written that brings the driving forces to life. The more certain driving forces and domain ground rules provide context and flow from the present day into the future, but of course these rules can change over time. Following a validation and final editing phase, the scenarios are ready for use.

Suggested reading

Scenario planning books

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Conclusion

Philips Lighting has been shaping the public realm with public lighting for more than a century. Innovation has always been at the heart of our rich history. We have pioneered many lighting industry transformations, including the transition from conventional lighting to energy-efficient LED lighting and, more recently, the connected lighting revolution. We are now taking light beyond illumination as we lead the integration of lighting with the Internet of Things. Transformations create a great sense of excitement, and we think deeply about how the changes they entail will impact our lives.

Philips Lighting is dedicated to helping cities around the world better prepare for the future. The scenario planning initiative outlined in this book is an effective method for embracing the uncertainty that lies ahead while challenging our pre-existing views of the future.

Using the Oxford Scenario Process methodology, the scenario planning team at Philips Lighting investigated the question of how we might experience cities in the future. The four scenarios in this report offer some perspectives on how the changes happening around us could manifest in 2035. The structure of the scenarios results from the interaction of the two main driving forces behind them: access to information and the consequences of rapid change. The scenarios can help us to think about how the future may change, and can challenge our assumptions about the world around us.

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How much time do we really spend thinking about the future? How can we identify sources of change that may affect us? Can we be better prepared for future uncertainty?

Scenario planning can help us to imagine how the world may change. The method, which uses multiple plausible and alternative views of the future, can challenge our assumptions of how the world functions, and it can reveal new perspectives. Scenario planning helps us prepare for potential sources of change so that we can make more informed decisions about the future, starting today.

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