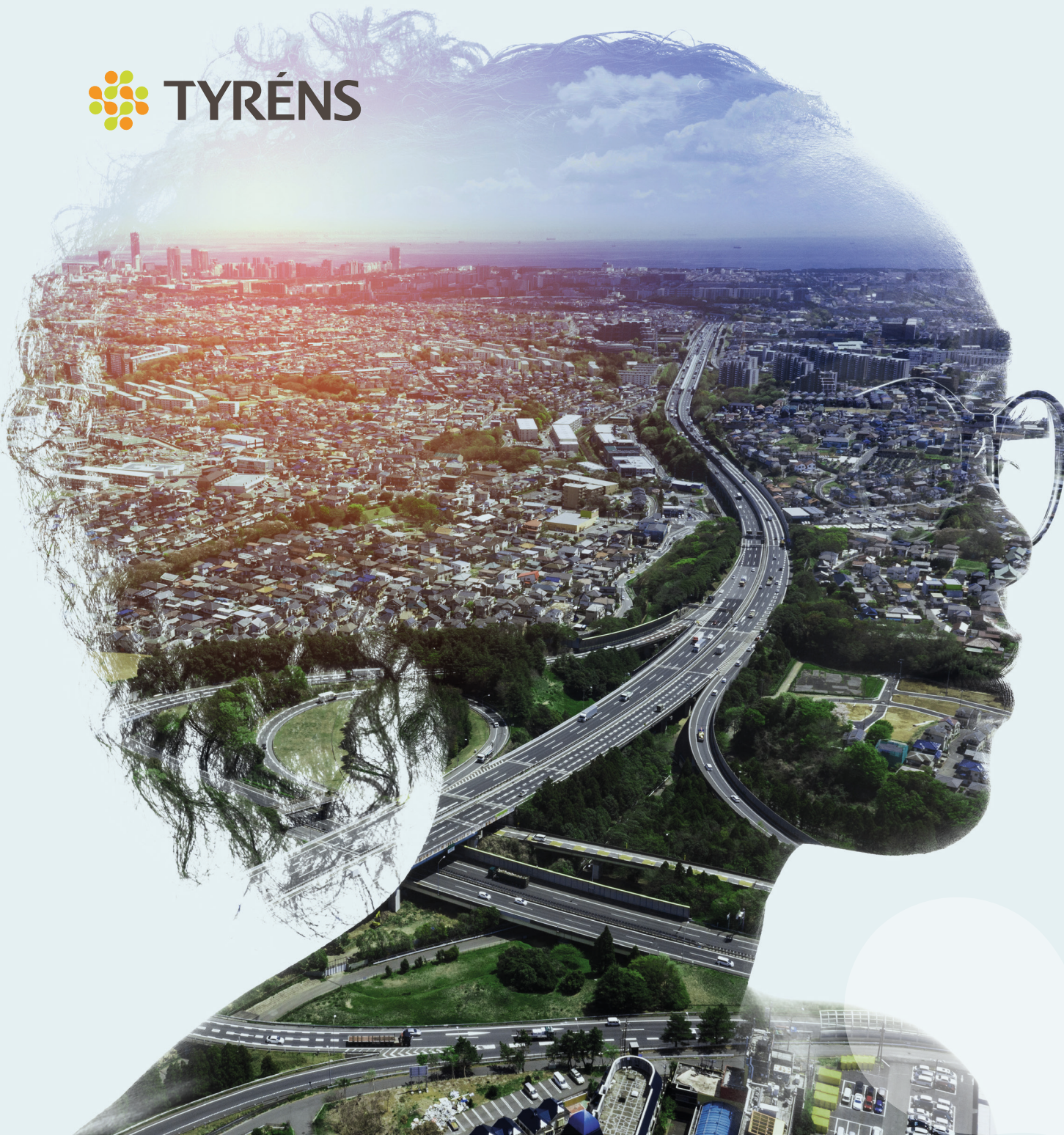


URBAN TRENDS & INNOVATIONS



INTRODUCTION

Urban Trends & Innovations addresses the almost overwhelming problems and challenges facing humanity in general and ‘urbanity’ in particular. On the one hand consumption and lifestyles among groups having relatively high incomes and hence most obvious in the urban areas of industrialized countries, contribute disproportionately to anthropogenic impacts on climate and environment. Many cities also provide appalling examples of poor urban environments and miserable living conditions. On the other hand, cities are wonders of opportunity and efficiency, of creative energies and harbor some of humanity’s finest achievements. Therefore, cities themselves present both the problems and solutions to sustainability challenges of an increasingly urbanized world.

The point of departure in this research is related to the wide variety of current innovation projects around the world, where businesses, academic institutions, and/or authorities are working together to meet today’s and future societal challenges, and eventually reach the sustainable development goals stipulated by the UN. We are

convinced that others can benefit from the lessons learned from these projects, that range from rather small technical innovations developed by a single company, to projects where several countries cooperate, regarding e.g. wastewater treatment.

The overall aim of Urban Trends & Innovations is to increase knowledge on how to plan, manage and implement innovative solutions for a more sustainable future society. The ambition is to identify key factors for success that different innovative sustainability projects have in common. We hope that the identified success factors will help to promote new projects aiming at furthering environmental, social and economic sustainability.

Starting with a list of over 100 renowned innovation projects from different parts of the world, 30 distinctive and inspiring projects have been included in this study. They all represent innovative solutions, are (partly) developed for an urban context, and can be related to at least one of UN:s 17 sustainable development goals. However, they differ when it comes to context, size, complexity, and location. As a way of defining “innovative

solutions” when selecting cases to include, we performed a future trends analysis that pinpoints the societal and technological trends we believe will have a significant influence on the future. The study is partly based on desk research and partly on interviews.

We are utterly grateful for all the people taking the time to speak to us and feel lucky to have met so many experts devoted to their work. We have interviewed project managers, CEOs, CTOs and other experts. We are also most grateful to our reference group and steering committee. The names of all participants are listed at the final page of this summary.

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RESULTS

On the project website (urbantrends.tyrens.com), the results from the desk research and interviews are compiled as “short stories” summarizing each case, and as “success factors” that they have in common. Additionally, a summary of the future trends analysis is presented.



SHORT STORIES

The case study results are partly presented as “short stories” - a summary of each case, where we describe the project’s background and purpose, key partners and funding, aim/vision, together with our analysis in brief. In this report we confine to a very short description of the included cases and the urban context they relate to. Based on the context, the 30 cases have been divided into eleven categories, as listed below. Please, see our website (urbantrends.tyrens.com) for access to all 30 short stories.

Collaboration & dialogue - Three cases: innovative collaboration within a city to prone new solutions regarding e.g. energy infrastructure, between cities to find a way to share data, and international collaboration regarding wastewater treatment.

Commercial services - One case about an innovative way of producing bio-packaging material, and another about robotics revolutionizing the food industry.

Experiences - One case about making a mega city greener, healthier and more sustainable, and another case about an innovative restaurant experience.

Governance - Four cases: smart city management and innovations, global networking for improving quality of sustainability data, novel techniques to assess citizen satisfaction, and nation-wide digitalization of public administration and services.

Infrastructure - Three cases: smart infrastructure, smart urban development, and digital twins for cities.

Security & preparedness - One case about flood prevention in a mega city, and another about digital monitoring of water quality.

Public services - One case about clean air in cities and one case about using garden waste as energy source.

Mobility - Three cases: next generation of transport modes, self-driving cars, and about blockchain solutions for smart mobility.

Social security & welfare - Four cases: new tech improving the everyday life of people that are disabled, increasing women's well-fare among less fortunate groups, basic income experiment, and about improving health and preventing chronic diseases.

The built environment - One case about building a new city and one case about a new solution to homelessness.

The business sector - Three cases: blockchain technique for financial transactions and for an entire community, and for revolutionizing of the farming industry.

SUCCESS FACTORS

Our analysis identified eight common success factors that are briefly described below. Please see our website (urban-trends.tyrens.se) for a full description of each factor, including some recommended strategic actions based on learnings from the interviews. We hope that you will find these success factors useful and valuable to your organization, when working with or for innovation.



1. A Great(er) Vision - Creating a Common Ground

A common long-term vision in terms of a more “noble” aim, such as “the greater good”, has shown to be vital to the projects in this study. Even fierce competitors or organizations without prior experience from cooperating, got together to create new possibilities under a common vision related to a more sustainable future.

“This is a unique partnership which sees landowners coming together to unite efforts in making London greener. Strategic support from the Mayor of London is key to ensuring the partnership aligns with wider London initiatives and is key to the project’s long-term success.”

Emily Woodason, Associate Landscape Architect, Arup.

2. The Innovative Ecosystem - Cross-Sectional Collaboration

The vast majority of respondents testify that gathering a diverse group of cross-sectional experts is vital and requires a very clear and brave project management. As project manager you need to trust these experts and give them space to maneuver, break up hierarchies and handle diverse ways of thinking. You need tools to deal with the input and output of ideas and creativity.

“The tech is not the problem - the biggest challenge is to improve the organizational ability to cooperate and share data cross-borders. Cooperation and sharing experiences within and between municipalities is key to improving this ability!” Claus Popp Larsen, Project Manager, RISE.

3. Caring and Sharing - To Build Trust

Long-term relationships, built on trust and mutual respect, seem to be necessary in these types of innovative projects. You need to allow partners to use some common assets, such as data, in their own business. It might be important to identify core business values that cannot be shared with everyone. Sometimes, formal agreements are needed in order to avoid misunderstandings and unnecessary illicit exploitation.

“We invest in long-term relationships that like all good relationships are built upon trust, mutual respect and are genuinely two-way.” Paul Clarke, CTO, Ocado Group Inc.

4. Prototyping – Continued Development through Testing

In today’s digitalized society technology advances at accelerating pace and consumer behavior adapts almost as rapidly. To keep up, organizations need to implement an iterative way of building the new. They need a prototyping, rather than a traditional linear, process.

“We have 100 beta testers, every time we have new ideas, we test them right away. I have read a lot of research papers. I learned all things much faster when implementing and testing and getting feedback. Developing tiny features and getting feedback – they (the users) are using it every day so they can tell quickly if something works good or bad.” Illka Pirttimaa, CEO, MIPsoft.

5. The Power of Failing - Creating a Culture for Change

Creating an innovative culture, where everyone in the organization is unafraid of failing and dares to take responsibility for development - is a key factor for success. This does not necessarily mean to 'fail fast'. When working with innovation for a more sustainable society, implementation might take time, and therefore failing too fast can be strategically wrong.

"Initially, we did not know just how important it was to change the organizational culture. It was more important to work for an innovative organization, rather than to work with innovations. We have moved from being an innovation system to becoming a system supporting innovation, where the project management supports and assists the teams." Mats Nilsson, Head of Department Projects & Development, Tekniska Verken Kiruna.

6. Disruptive Development - Finding Balance Between Structure and Chaos

Regardless of the nature of the innovation (from incremental to radical), it seems to be useful to manage innovation through different types of innovative activities at different levels in the organization. Both structural and more "chaotic" innovative work is often needed.

"Initially, you need to run these innovation projects in a very tight ship, it has to be strictly controlled in order to avoid huge delays." Mika Hakosalo, Site Manager, GrowSmarter Stockholm.

7. Add Heart and Soul - Motivating through Inspiring Stories

This study tells the stories of different projects, but the interviews also revealed the power of stories in the projects. The stories reveal the heart and the soul of each project. Besides being a strong inspirational and motivational factor, the stories are useful in different types of communication.

"Don't underestimate the importance of communication! The stories. They are a tool to motivate people... Our story has made several people committed to our project. Large organizations, among others. Maybe we should have hired a storyteller from the start. Society is short on stories and tales. There is not a clear beginning, end, not a hero, no villain. By way of example, we have kept an old warehouse and crane in the harbor - through it we can pass on the story of the place and its history." Micco Grönholm, Head of future, Helsingborg, Sweden

8. Roll-Out Plan- Conquering the Innovation Paradox

It is not easy to realize an idea and making it reach and succeed on the market, in particular when the market equals the society. The cases that have failed to reach their project objectives would probably have benefitted from a more comprehensive and flexible roll-out plan. The roll-out plan should include e.g. milestones, key partners in different phases (politicians, civil organizations, authorities, experts, etc.), and necessary tech development at each step of the process.

FUTURE TRENDS

If we could visualize the future, we could hopefully identify the tactical decisions needed today to reach a sustainable society tomorrow. In this study, we have tried to visualize the future through stories about two fictive persons – Emma and Oliver - living in the year of 2030. We provide narratives about the future through their eyes; their experiences, dreams, their happiness and fears. How they live and work, travel, and associate with others. To avoid presenting a too optimistic perspective, we let Emma live in a utopian society and Oliver in a dystopian one.

The stories of Emma and Oliver are based on societal and technological trends we believe will have a significant influence on the future. We admitted 45 of the most influential societal- and tech trends to affect their lives.

The identified trends supported our identification of innovative cases from around the world to include in our case study. If you are interested in the stories about Emma and Oliver, bits and pieces will be released on our social media platforms, please see the project website (urbantrends.tyrens.se) for further information.



CONCLUSIONS

From the diverse set of cases studied here, we have observed a great number of learnings regarding how one should plan, manage, and implement innovative solutions for a more sustainable future society. The learnings are to some extent case specific, but they also have a lot in common, especially when it comes to matters related to leadership, collaboration, and organizational strategy. We have distilled eight key factors for success that most of the cases have in common.

At first glance these factors might not seem new or innovative, but beneath the surface, when studying the project-specific

perspectives and applications, we discovered their novelty and inspirational power. We hope that these common success factors can be helpful in future projects in order to speed up the development of new sustainable solutions. Moreover, we have realized that innovations for sustainable societal solutions, represented by our cases, often need an adjusted innovation process in order to succeed. The adjusted innovation process is not outlined in this report. Please, contact us if you have further questions.

We welcome future research that may be able to verify or falsify our findings and broaden the scope further. However, all caveats in mind, this study does bring about important learnings from 30 inspirational innovative solutions to a variety of societal challenges.



PARTICIPATING EXPERTS

We would like to thank all the participants making this study possible. Their contribution, through interviews, and reference group or steering committee meetings have been invaluable. Please see list of all participants, in alphabetic order, below.

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