The Next Moose PRISM

For analyzing the present and predicting the future

An introduction to The Next Moose PRISM, what it is, and how it may be used.

1. Summary

How is the future created? One obvious answer is in an interchange between human desires, technologies, governance, and the forces of nature. The Next Moose PRISM is a model and a tool to capture the prerequisites for this interchange. It is a multidimensional, multilayered composite model representing the major components and their relationships. As a tool, it can be used to inspire and engage creativity.

It is not intended to be a perfect model of the world. The purpose is to facilitate analyses of situations for industries, markets, and businesses and to identify the drivers changing these situations. The outcome of analyses are predictions of the future, envisioning new possible situations.

This paper explains the model and how it may be used to derive predictions. Some of the definitions are very basic and self-evident but are nevertheless included for clarity.

2. Overview

The Next Moose PRISM comprises **components** and **composites** presented as a canvas. It is a visual presentation that can be used as a focal point for creative work.

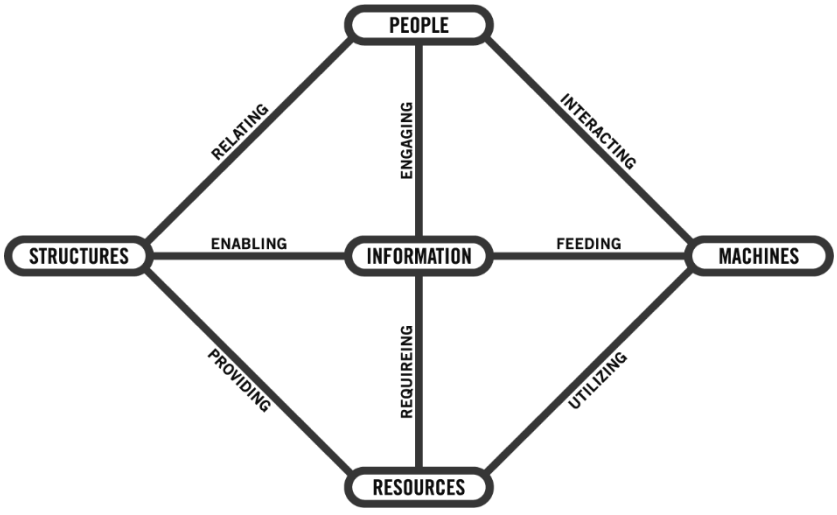


Fig 1. The Next Moose PRISM canvas.

The components are **entities** and **relations**, and the composites are **views** and **triangles**.

There are five groups of entities: **People**, **Machines**, **Structures**, **Resources,** and **Information**. These are the ***nouns*** of the model. There are eight relations between these entities: **Interacting**, **Feeding**, **Engaging**, **Enabling**, **Relating**, **Utilizing**, **Providing,** and **Requiring**. These are the ***verbs*** of the model.

The relations are bidirectional. It is in the relations the action takes place. The names of the relations should not be taken too literally; they are simply pointers to the dynamics they represent.

There are four views: **The People view**, **The Machines view**, **The Structures view** and **The Resources view**. Each view covers two triangles. The views capture contexts and use cases from the viewpoints of the entities.

Finally, four triangles capture four technology-driven domains: **Services**, **Channels**, **Platforms,** and **Components** (here referring to components for building machines).

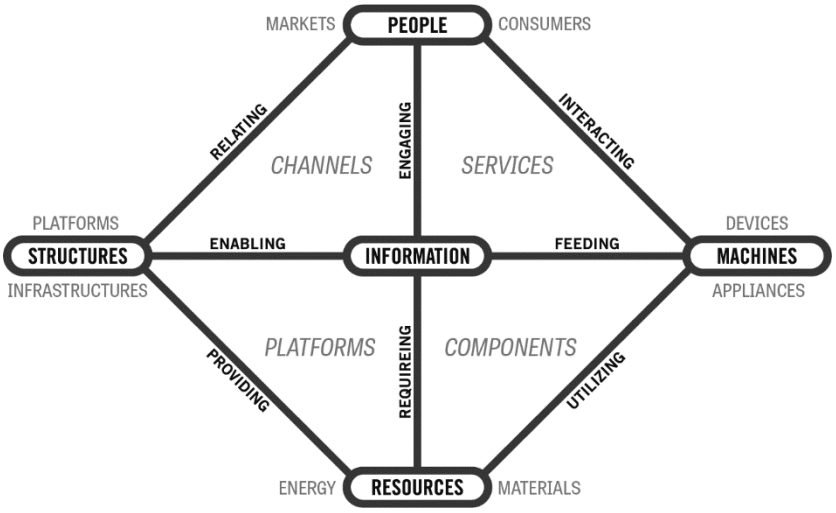


Fig 2. The Next Moose PRISM with domains and examples of entities.

3. Entities

The five entities summons groups of static objects, hence the reference to nouns. They are viewed as static when using the model for analyses.

The five groups are:

- People
- Machines
- Structures
- Resources
- Information

People interact with **Machines** to fulfill various needs or desires. **Structures** make the machines operable, and people often relate to a machine or devise through some kind of structure. Various **Resources** provide the building blocks for both structures and machines. **Information** is the glue that makes the dynamics between them possible.

3.1 People

This entity includes all aspects of people. It can be as users, consumers, or producers. It can also be the physical bodies of people. People as groups constitute markets with niches based on roles, demographics, or geographical areas.

On the horizon, certain robots may be viewed as people or rather taking on the roles of people.

3.2 Machines

An entity covering all kinds of machines used by people – or other machines. When machines use other machines, it is viewed here as clusters of machines operating as a single machine.

Typical examples are computers, devices, robots, 3D printers, household appliances, vehicles, industrial and construction machinery, and sensors.

Every machine has some kind of interface where information is exchanged.

3.3 Structures

Structures include all kinds of relevant infrastructures on different levels of abstraction. The most obvious are structures such as roads, electric grids, and telecommunication networks. Other levels may be networked ecosystems, third-party platforms, and frameworks.

Examples of structures of networked ecosystems are cloud and blockchain services (Microsoft Azure and the Bitcoin blockchain). Markets for apps are examples of third-party platforms (Apple App Store and Salesforce Appexchange). A framework may be a standard or protocol (such as SAFe from Scaled Agile).

Other structures are organizations and processes within organizations, standards, laws and regulations.

3.4 Resources

Resources include everything needed to make Structures and Machines work. It can be energy, materials, components, and capital. Typical examples are silicon, graphene, electronic components, batteries, and electric power. Other types of resources are capital and workforce skills and competencies.

3.5 Information

Everything contains and involves information in one form or another. Information is the glue that makes instances of entities into a functioning whole. Information here is in every expression and form, from bits to complex aggregations such as natural language and images – from uninterpreted data to understandable information in the ordinary sense of the word.

The apparent purpose of information is to inform, instruct or convey ideas. Software is an example of information in the form of instructions to be acted upon by machines.

4. Views

To capture the dynamics from the perspectives of the entities, there are four views.

- The People view
- The Machines view
- The Structures view
- The Resources view

4.1 The People view

What a selected view of the world looks like from the viewpoint of the consumers.

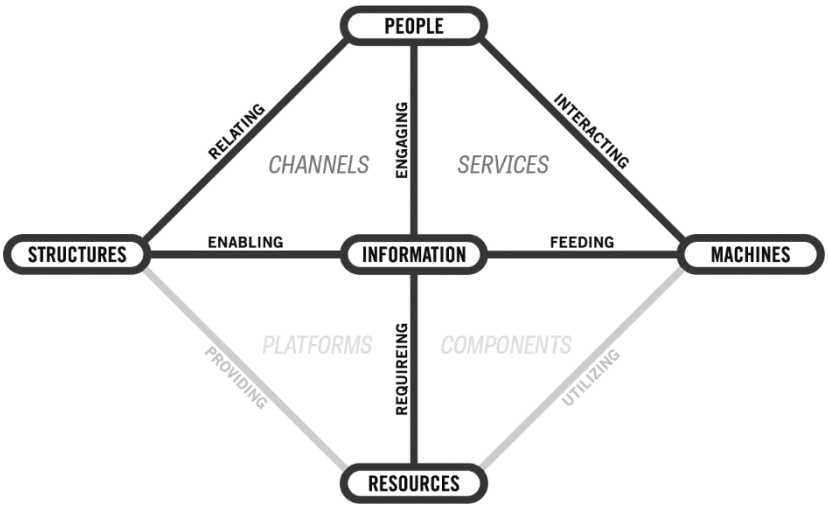


Fig 3. The Peoples view.

People **interact** with machines to fulfill needs and desires. The interaction is bidirectional and driven by information. The machines are **feeding** information that **engages** people and vice versa.

People **relate to** and access the machines and their functions through layers of structures. Indirectly the structures and machines (devices) can give people access to resources, such as utilities.

4.2 The Machines view

The viewpoint of the world from the perspective of machines.

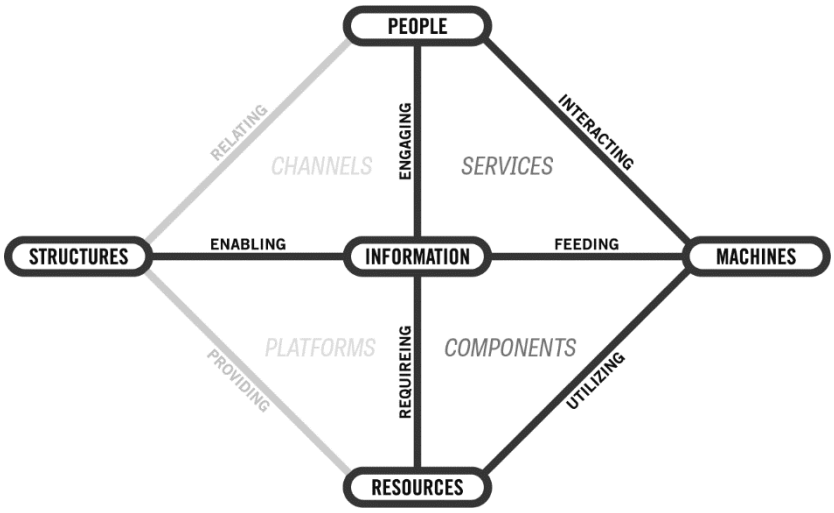


Fig 4. The Machines view.

Machines interact with people by **feeding** and being fed information. Machines are created and able to function by **utilizing** various resources. For this, the resources **require** information. Depending on the nature of service and function, machines are **enabled** by interacting with structures, also here **feeding** and being fed information.

4.3 The Structures view

How structures are enabling value creation.

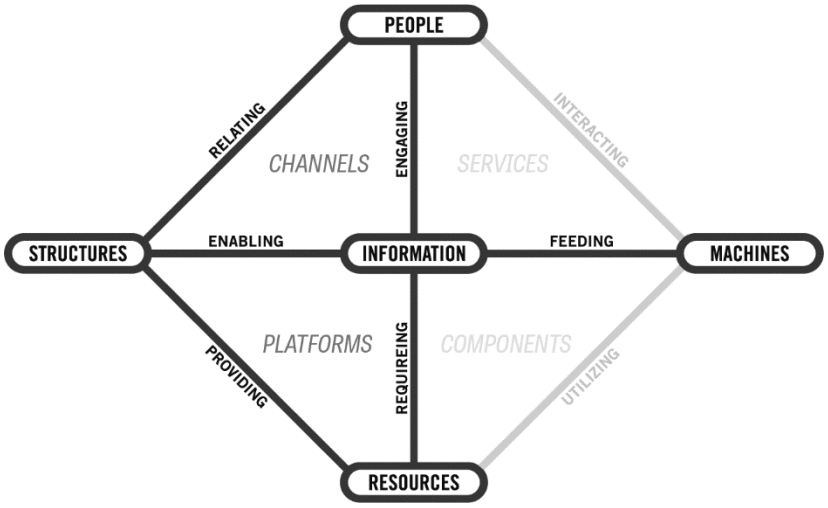


Fig 5. The Structures view.

It is through **relations** with structures that people get access to the values created by machines. Structures also **enable** the development and function of machines. The model is recursive, as in the case where machines operate structures. Structures provide resources, and resources **provide** for the production of structures.

4.4 The Resources view

The world from the viewpoint of resources.

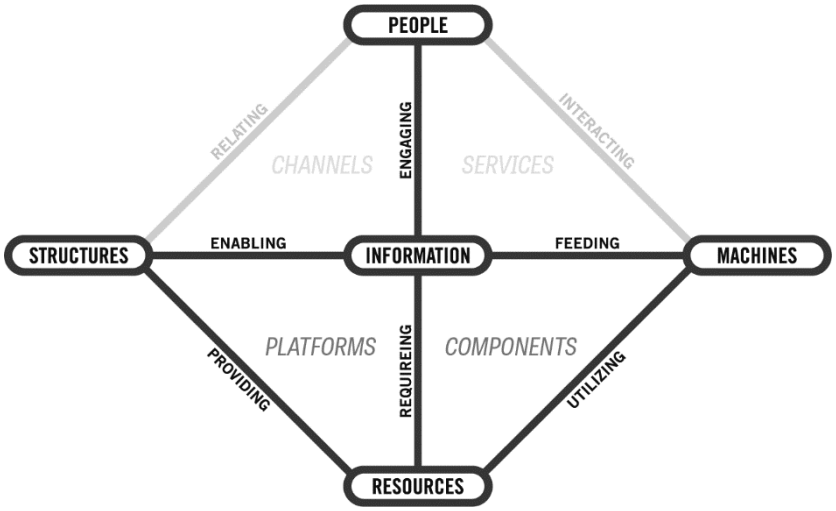


Fig 6. The Resources view.

Resources may be energy, materials, components, capital, or people. Structures and machines are **provided** for and **utilize** the necessary resources to be built and operated. Information defines what specific resources are **required**. Also, structures enable resources **requested** by people.

5. Triangles

For a deeper analysis of the decisive forces and capacities that determines change and competitiveness, the four triangles capture more detailed views of the dynamics involved. The triangles are:

- Services
- Channels
- Platforms
- Components

The reason for looking at triangles separately will become obvious when using the model to capture requirements.

5.1 Services

Services is a format for delivering value in an interaction between people and machines.

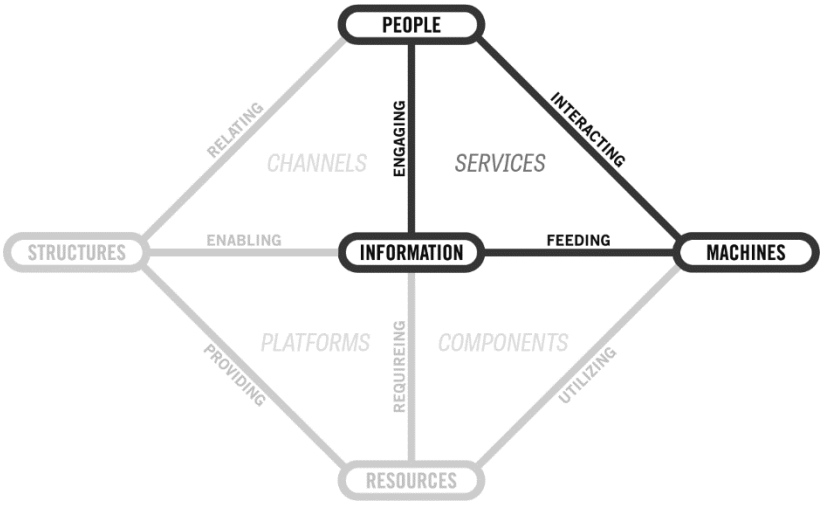


Fig 7. The Services triangle.

There is a wide range of interfaces enabling the interaction between humans and machines and between machines. It can be visual, audial, or tactile, and haptic – usually a combination of them all – adapted to the human senses. Interfaces may also involve human expressions, such as voice, gestures, and eye movements. Typical examples are keyboards, computer screens, AR, VR, and voice with natural language interpretation.

The value of the interaction is in the tasks performed by the machines and the information exchanged. Machines feed information that engages users, who in turn feed the machine with information and instructions.

Machines are the essential delivering mechanism of a service or function. Even though a service may be entirely software-driven, it is machines that execute the software. The machines may also interact with other machines on platforms of enabling structures.

Dynamics of change are all developments widening and deepening the interaction. One example is the new horizon of direct interfaces that integrate with the body through sensors and implants. It is technologies that may give direct access to organs, such as the brain, and in turn, human thoughts.

5.2 Channels

People relate to services through channels.

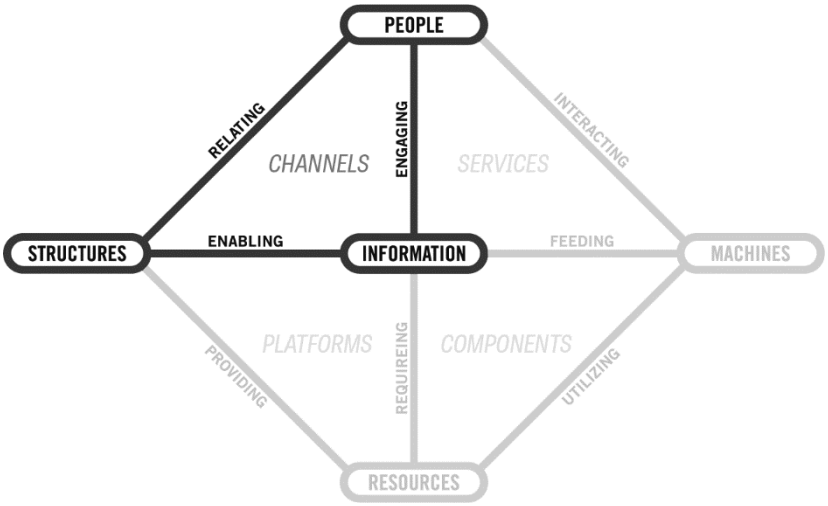


Fig 9. The Channels triangle.

Here, channels are viewed from a broader perspective. Various structures make up the landscape within which services are found and made available. People relate to structures such as electric grids, the internet, the world wide web, telecom networks, cable networks, radio spectrums, roads, railways, airports, laws, regulations, standards, etc. – to mention a few.

Through these people today use computers and mobile phones to access information and to communicate. People use tv sets to be informed and entertained and cars, trains, and airplanes to travel. Laws, regulations, and standards make services like these trustable.

Structures contain platforms (please see below), and platforms are therefore acting as channels.

Examples of dynamics of change are, of course, new technologies making it easier to access machines and services. It could be more advanced PaaS (Platforms as a Service), AI-capabilities as services on cloud platforms, and new app industry-specific domains, such as finance or the public sector.

5.3 Platforms

Platforms are closely related to channels. Platforms in many layers are made up of structures and resources and their interchange of information.

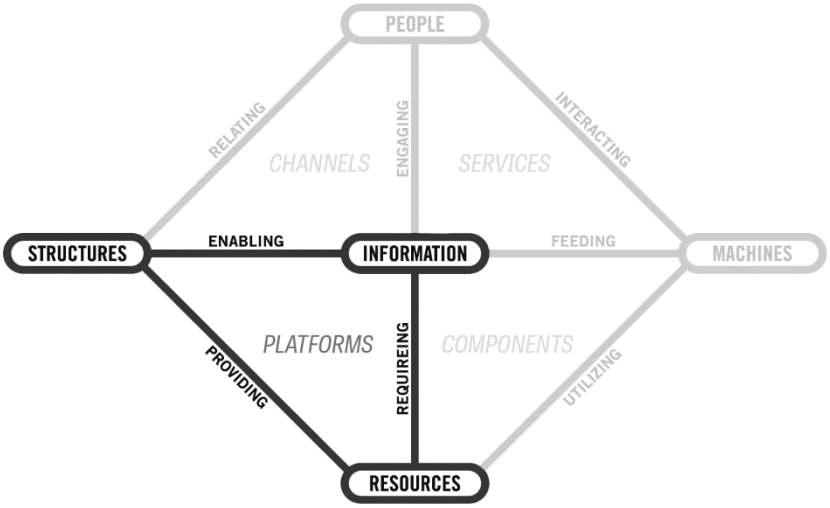


Fig 10. The Platforms triangle.

A platform is something upon which something else may be built. It is a structure that makes specific resources available to design, develop and produce components, services, and channels. Typical platforms are technical or organizational executed with software or business processes. Examples are app stores for computers or mobile phones, blockchain platforms, and agile organizational models.

Examples of dynamics of change are requirements stemming from demands driving the evolution of services and channels.

5.4 Components

Machines are made of components, and machines utilize a wide range of resources to function.

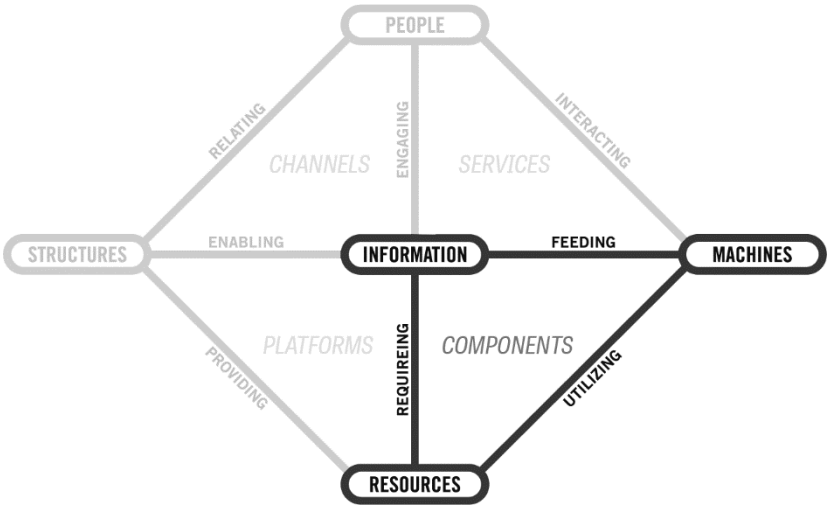


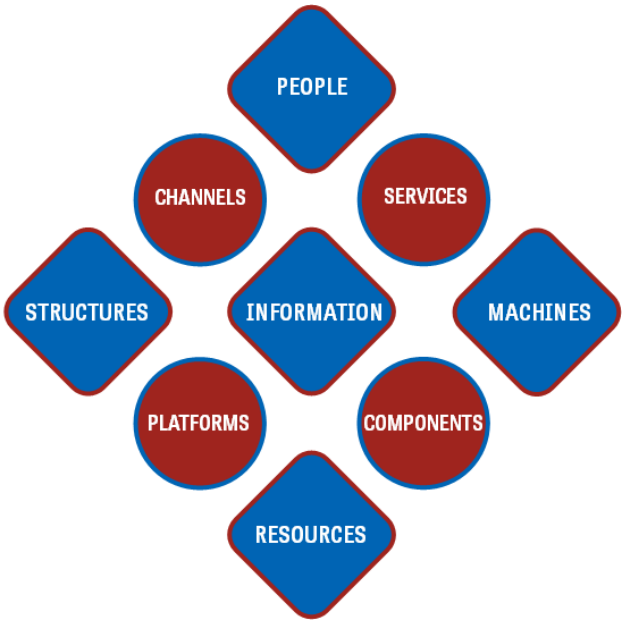
Fig 8. The Components triangle.

As mentioned earlier, resources may be energy, materials, components, capital, and people. Machines are feeding information required to utilize the necessary resources. It can be in real-time or as specifications.

Examples of resources are silicon, graphene, electronic components, batteries, electric energy, money, and humans. Examples of dynamics of change are the development of new materials such as graphene, new energy generation and storage technologies, and new capital markets such as crowdfunding.

6. A simplified graph

Once the dynamics between entities and relations in the composites are understood, a simpler graph may be used. This graph provides an overview suitable for reports and workshops.



7. Using The Next Moose PRISM

The model is intended as a tool for predicting the future. The purpose is to find drivers of change, the relationships between them, and their levels of impact. The process of using the model for predicting the future is answering a series of questions. The answers are the building blocks of a prediction.

The concept of a **situation** can signify an industry, a market, a business or group of businesses, a country or region, or a target group of people.

A **prediction** in this context is a description of a possible future derived from analyzing changes in the composite parts of the model. It is similar to a scenario but a freer form than what is common in established methods for scenario analyses. A prediction can be a short statement referring to a part of the model or a lengthy paper outlining a detailed future situation.

One requirement, however, is that a prediction shall take a situation from one state to another.

Examples of results using The Next Moose PRISM can be found at the website nextmoose.com.

7.1 Analyzing the present

- What is the present situation that is to be analyzed?
- What are the states of the entities in this situation?
- What are the present states of the relations?
- What information is exchanged between entities?
- How is the above expressed in services, channels, platforms, and components?

Describe the composite parts as accurately as possible in reference to technologies, properties, capabilities, capacities, and behaviors.

7.2 Predicting the future

- What will and can change? In one year ahead? In three or ten years ahead?
- What change will have the most significant impact?
- What are the major obstacles preventing change from happening?

Experiment with multiplying the dynamics of the relations. What would happen if, for instance, battery capacity would increase by a factor of ten? Or if the speed of the internet was ten times faster? How would AR capabilities available in lenses or ordinary prescription glasses change the prerequisites?

After possible changes and their impacts are identified, a prediction may be formulated that takes the analyzed present situation into a new state, a new situation.

8. Notes on IPR

9. Revision history

How this paper has evolved.

1.0, 2018-08-03
First release.

1.1, 2018-08-06
Minor errors corrected.

1.2, 2019-03-03
Minor errors corrected.

1.3–1.5, 2022-10-16
Layout format changed. Minor errors corrected.

2.0, 2022-11-11
Simple graph introduced.