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# Ways of Framing Change in Design Practice

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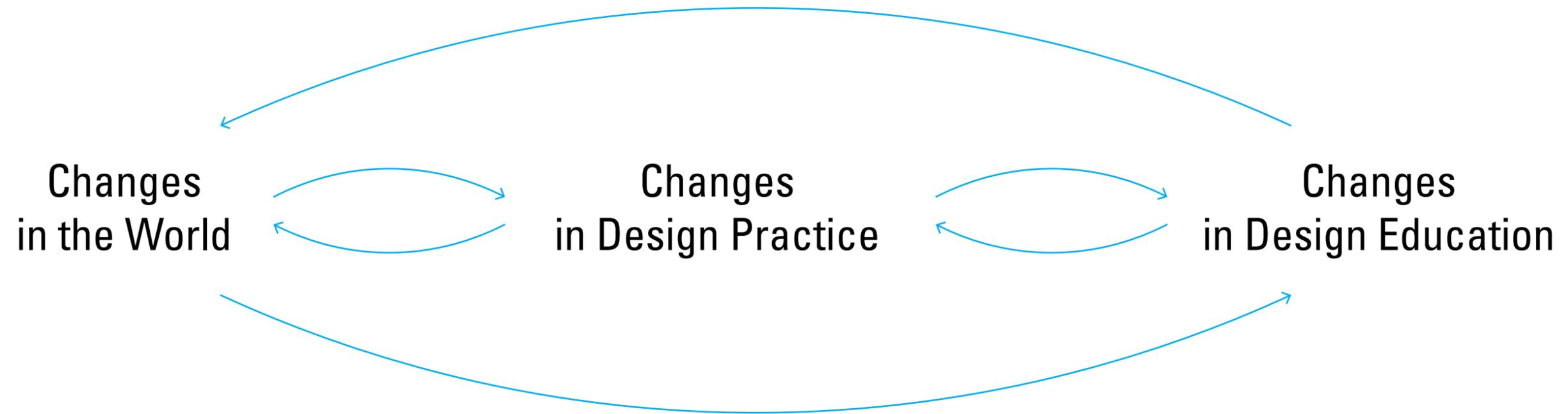
# **Students graduating this year are likely to still be practicing in 2062 or even 2072.**

- What will the world be like then?
- How will design practice have changed in response to the changing world?
- How should design education respond to changes in the world and practice?
- How should students prepare?
- What will practitioners need to know?
- What should we be teaching?

# This reasoning implies a simple progression.



# But things are more complicated.



# **So: What is driving change in the world?**

And how is it affecting design practice and design education?

- Adapting to the information revolution, particularly
  - New technologies
  - Reconfigured social + economic relations
  - Changes in how we think, understand, and make sense
- Recovering from the industrial revolution, particularly
  - Issues around environmental justice
  - Issues around social justice

**Seven new technologies have emerged and require attention.**  
They are entwined and form a new layer of data infrastructure.

- Sensors + measurement — **to collect data**
- Pipelines/ETLs + data wrangling — **to ready the data**  
(Extract-Transform-Load tools)
- Smart-Connected Products (IoT) — **to act locally + connect**
- Edge + Cloud Computing — **to aggregate + manage**
- Data science — **for finding signal**
- AI (ML, DL, CV, NLP) — **for building models**
- Digital Twins — **to manage on-going operations**

# This new data infrastructure enables systems to understand relevance — at enormous scale.

## Relevance

The right resources  
in the right amounts  
at the right time  
in the right place

=

## Identity

for a person  
or team

+

## Context

to accomplish  
the tasks at hand  
without disruption  
or loss of flow

# Understanding relevance is already big business.

For example:

- Google
- Amazon
- Facebook
- Netflix
- Tesla
- even Target

For example...

By 2008, Netflix knew if you were gay.

By 2012, Target had figured out how to identify if a woman is pregnant, just from publicly available information.

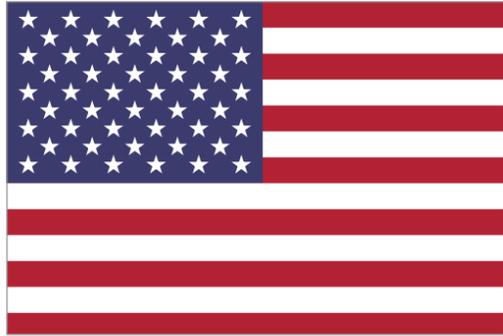
**This is 'Surveillance Capitalism' as Suzanna Zuboff has called it.**

# **But what's to stop the state of Texas from buying the same information? And more?**

Add to the information Target uses:

- Data from license plate readers
- Location data from your phone
- Data from your health apps
- Data from your fitness trackers and medical devices
- Data from sensors in your home and car

# We have choices. We can still influence the society we live in.



## Prosperity

Surveillance Capitalism

Facebook + FICO

Sales machine

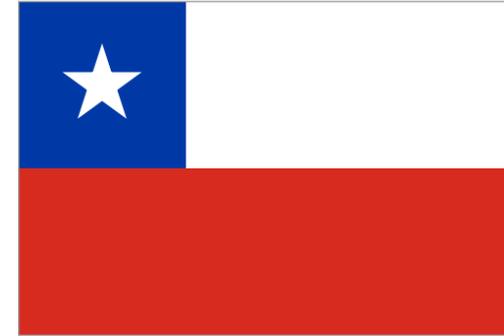


## Stability

Confucian Big Brother

Social Credit Score

Control machine



## Happiness

Digital Socialism

A modern CyberSyn

Planning machine



## Health

Quantified Self

Ubiquitous testing + feedback

Experiment machine

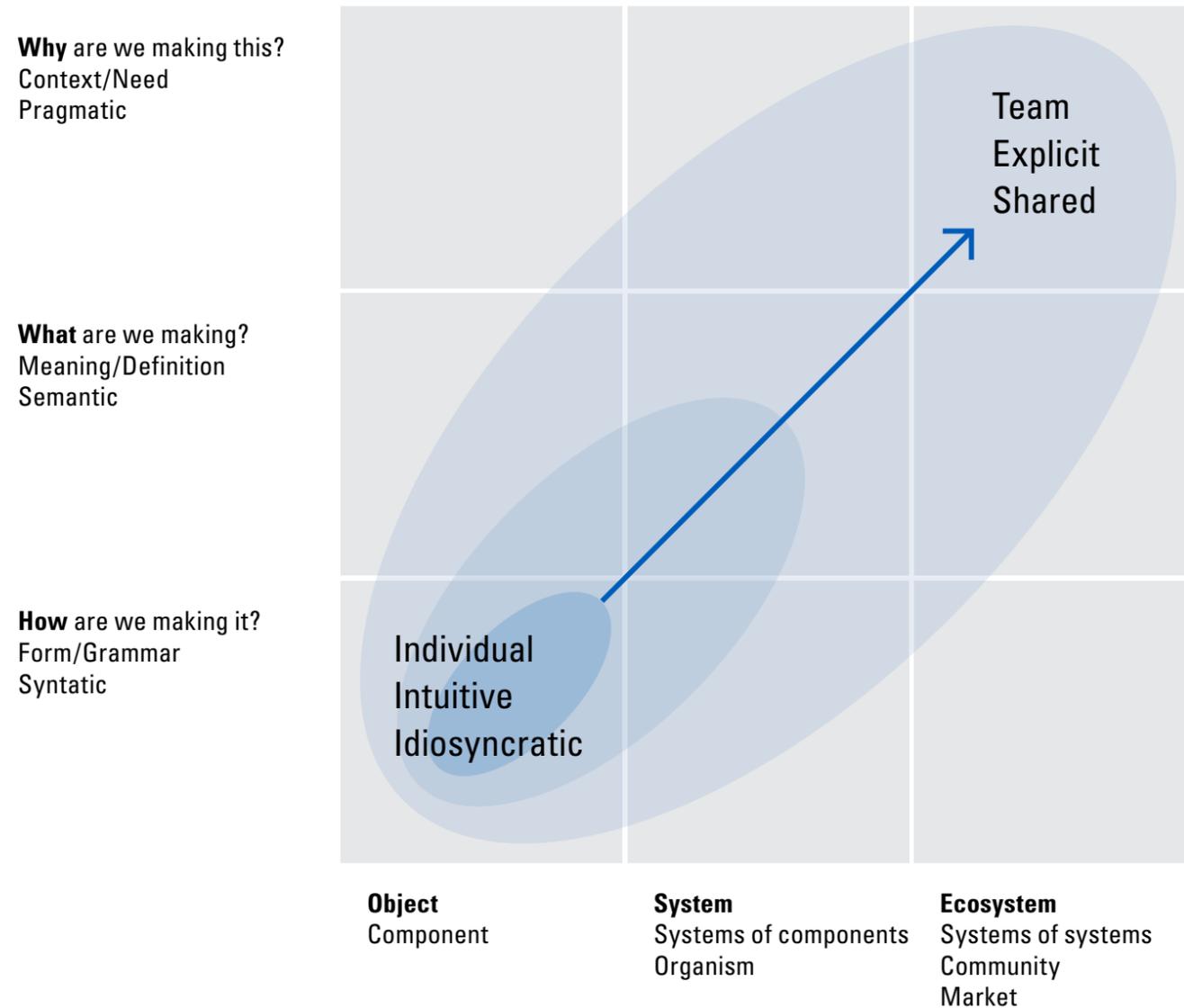
Cf. Suzanna Zuboff (2018); Evgeny Morozov (2014) + Eden Medina (2011).

<https://www.newyorker.com/magazine/2014/10/13/planning-machine>

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# Appendix

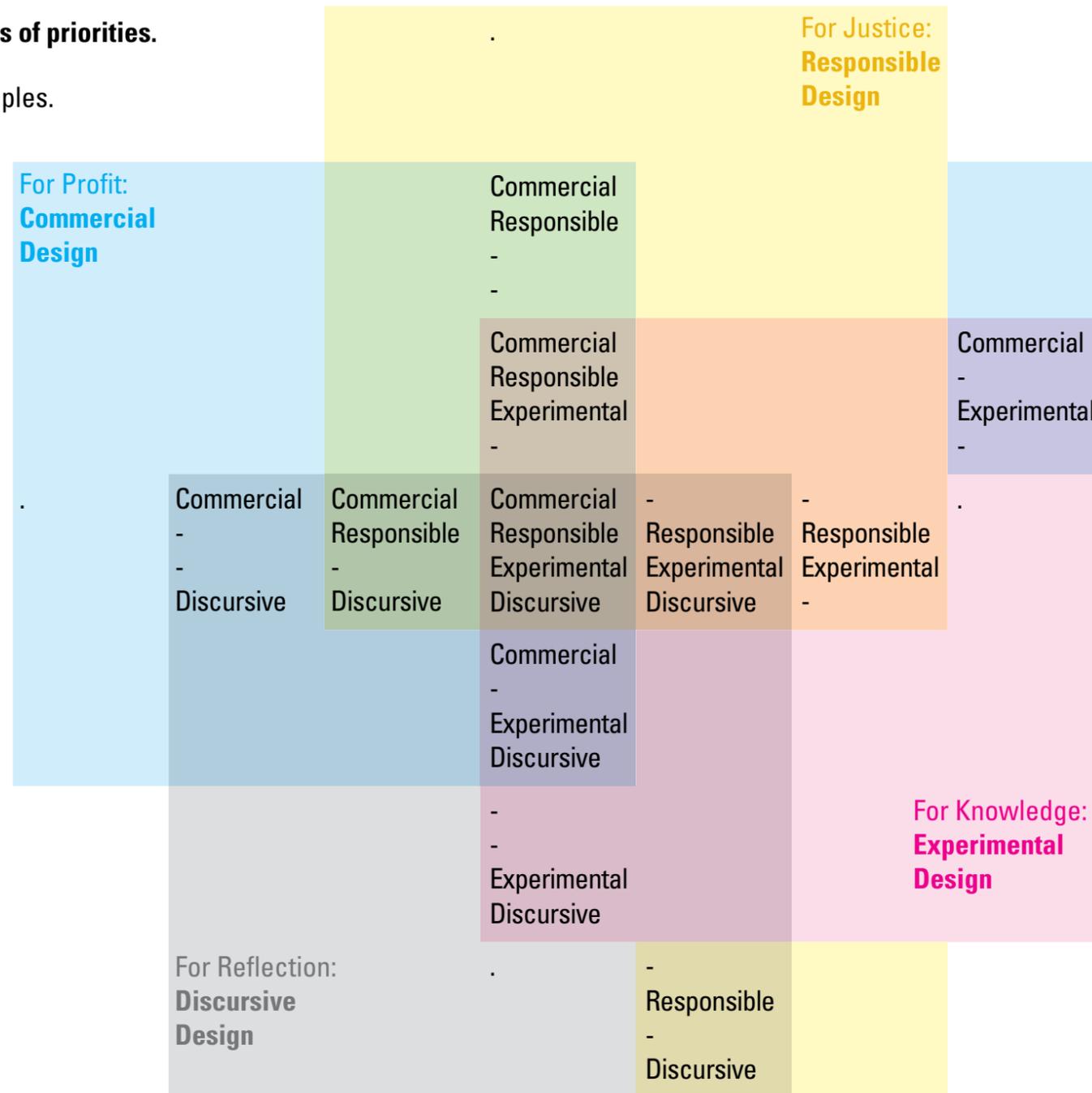
Design discourse typically focuses on **'what-we-design'**.  
Education often addresses **'how-we-design'**.  
Bruce and Susan Tharp suggest we also consider **'why-we-design'**.



# The Tharps also propose a four-field model of overlapping 'reasons why'.

The Four Fields may overlap, suggesting many combinations of priorities.

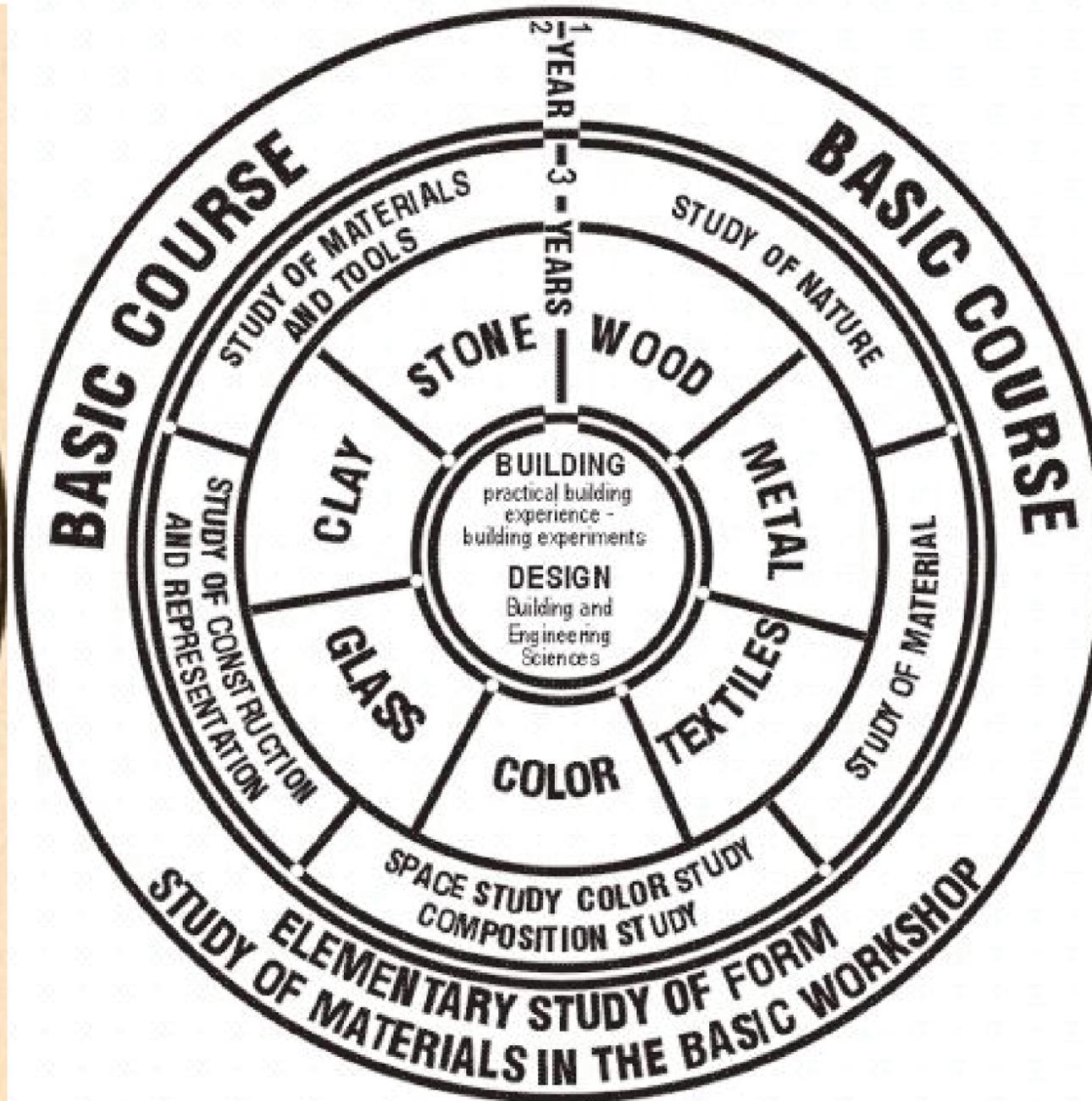
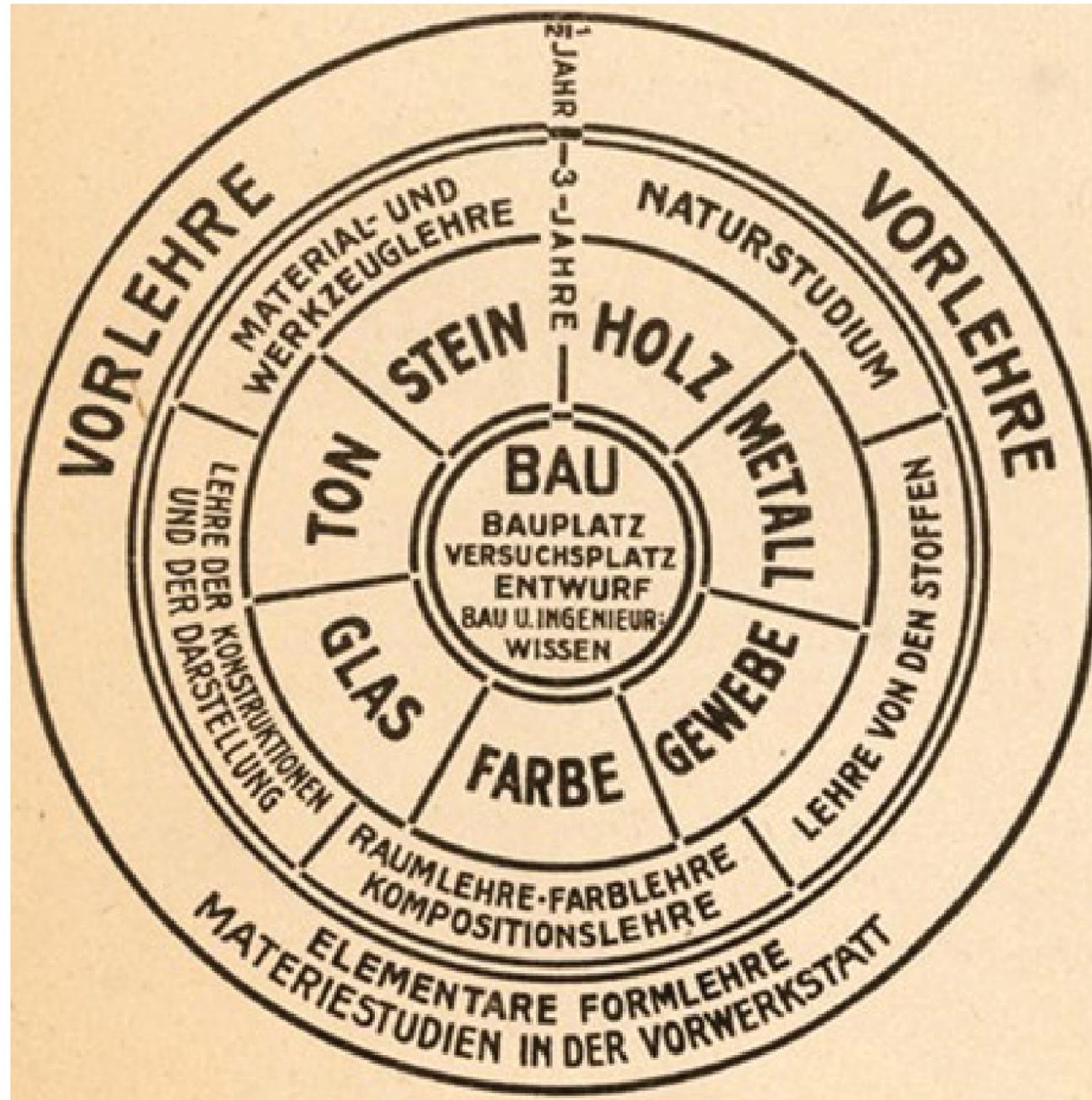
The Tharps offer several examples.



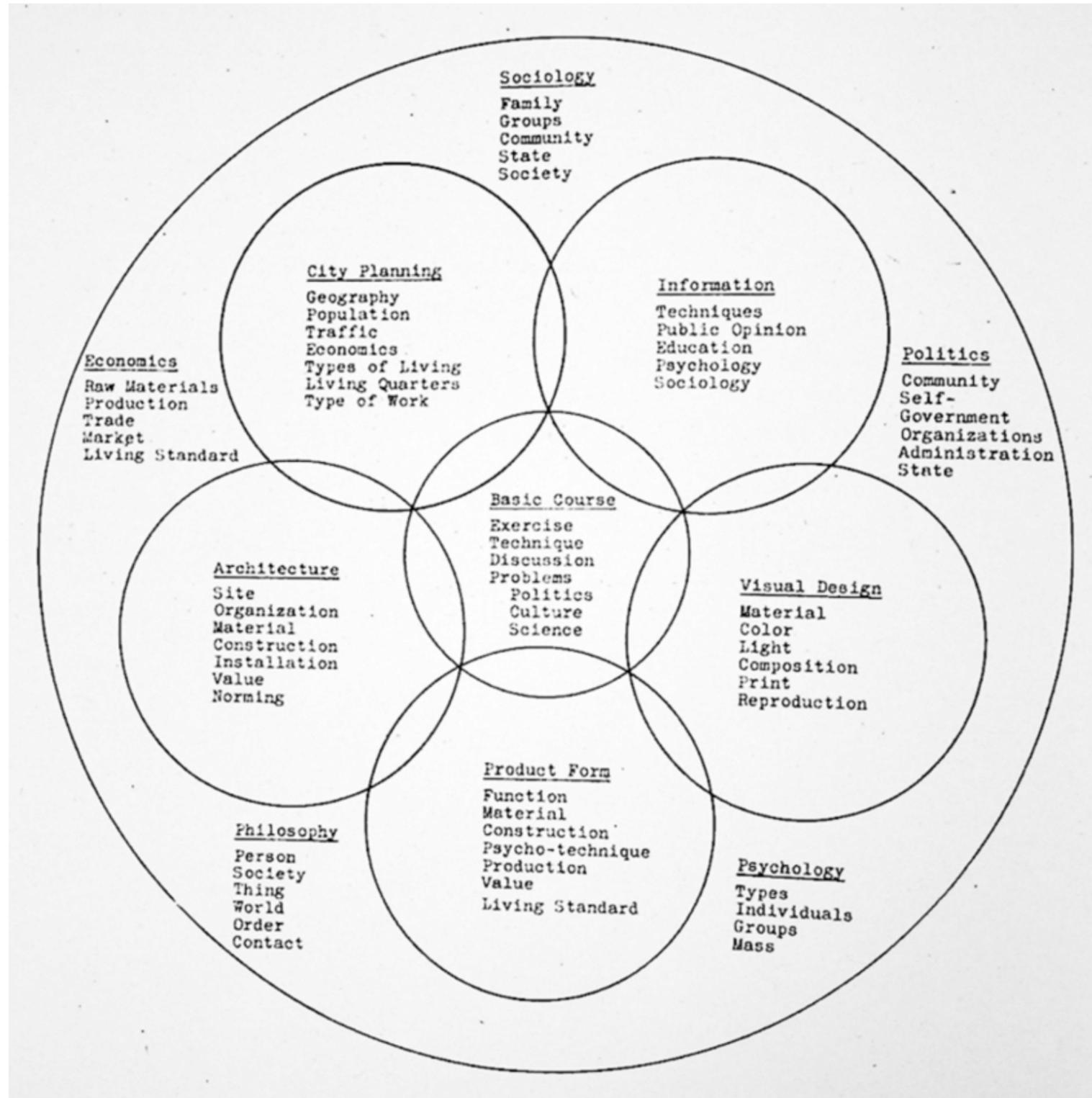
# It may be fun to recall the Bauhaus curriculum model.

The Bauhaus Curriculum Wheel, 1922 (original German) ...

... (English translation)

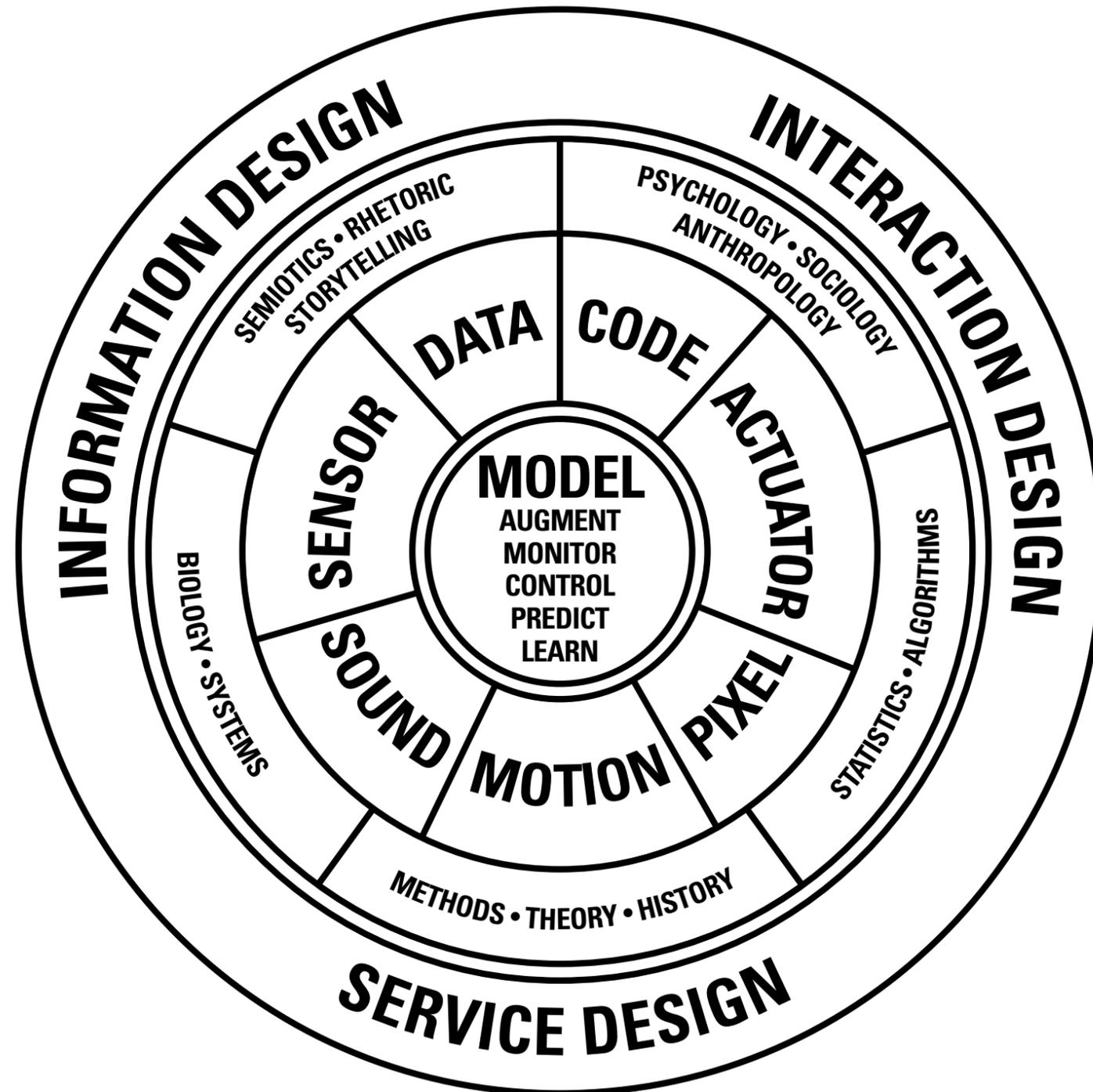


# HfG Ulm revised the Bauhaus model.

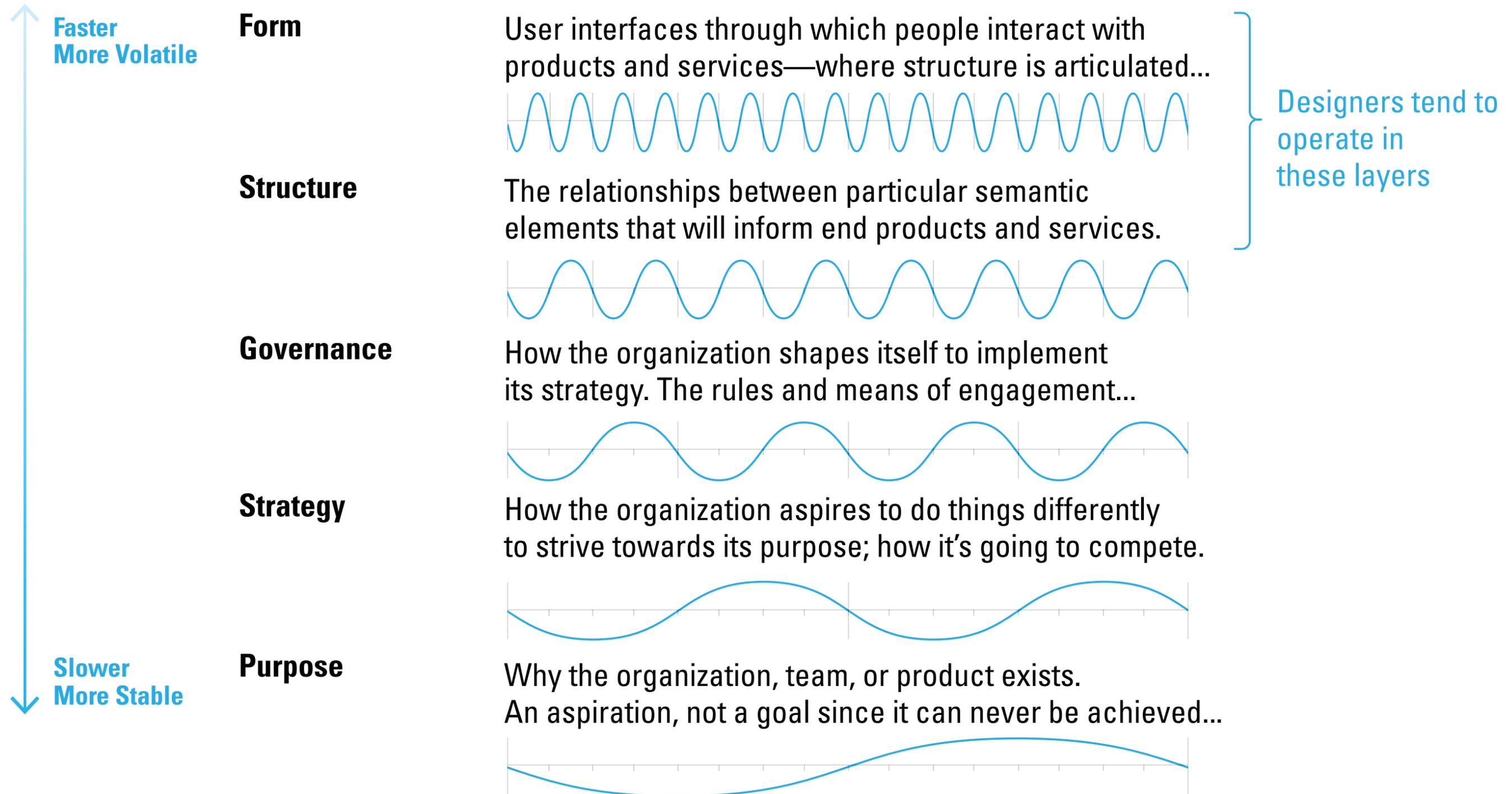


# We might propose our own update.

A Curriculum Model for Information-Age Designers



# Organizations need mechanisms for evolving both quickly + slowly.



Cf. Jorge Arango, "Living in Information," 2018.

FDE needs a shared model of **The Space of Design Practice** in order to anchor discussions about change — where we are and where we may be going. Without a shared model, the project will founder, and its report will sink unread.

In “Discursive Design,” Bruce and Stephanie Tharp (2018) noted that design discourse historically focused on ‘what’ and to a lesser extent on ‘how’, with little discussion of ‘why’.

By focusing on ‘why’, they developed a ‘four-field framework’ which situated commercial design in the context of a broader discourse about designing.

The information revolution is driving changes in commercial design , and it’s also affecting the other realms of design.

### Historical Lenses for Viewing Design

Examining relationships between designers and their work

#### The lens of **What** —

The outcomes or products of designing, e.g., app design, car design, shoe design, typeface design, etc. or more generally: messages, artifacts, experiences, systems. A another dimension of ‘What’ is human activities: e.g., working, learning, and playing; also traveling, collaborating, identifying-as, caring-for, etc.

#### The lens of **How** —

The ‘means of production’ or processes of designing, e.g., methods of research, analysis, and synthesis or ethnography, sketching, modeling, genetic algorithms, etc., that is, ‘participatory design’ or ‘design thinking’.

#### The lens of **Why** —

The goals or values of designing, e.g., improve, help, facilitate, include, better-understand or remind, inform, inspire, provoke, persuade, etc

Also, more generally: Profit, Justice, Knowledge, Reflection — not exclusively and often in combinations.

See also, Vitruvius: ‘solidity, commodity, and delight’ — updated as ‘desirable, viable, feasible.’

### Four-field Framework — the lens of ‘Why’

Organizing the ‘space’ of design practice in terms of ‘agendas’

#### The agenda of **Profit** —

drives the realm of **Commercial Design**, selling goods and services in a market, e.g., ‘solving problems’ and meeting so-called ‘human needs’, with the ultimate goal of ‘maximizing shareholder value’.

#### The agenda of **Justice** —

drives the realm of (Socially) **Responsible Design**, helping under-served people and the planet’s living systems, e.g., ‘design justice’ and ‘sustainable design’.

#### The agenda of **Knowledge** — (i.e., ‘Truth’ and ‘Beauty’)

drives the realm of **Experimental Design**, exploring (new) possibilities with materials, tools, or processes, or inquiring into aesthetic, conceptual, or perceptual issues — on a continuum from play to work to science.

#### The agenda of **Reflection**—

drives the realm of **Discursive Design**, creating artifacts that question assumptions and tell stories about alternative futures (other social structures + technologies) in order to provoke response and initiate debate, e.g., ‘design fictions’ and ‘speculative design’.

### On-going Paradigm Shift — the changing ‘Context’ or Milieu

Largely (but not exclusively) in Commercial Design

#### Industrial Revolution

Mass production of goods

Physical materials

Graphic Design  
Product Design

Bauhaus paradigm

#### Information Revolution

Computation on everything everywhere

Data + algorithms

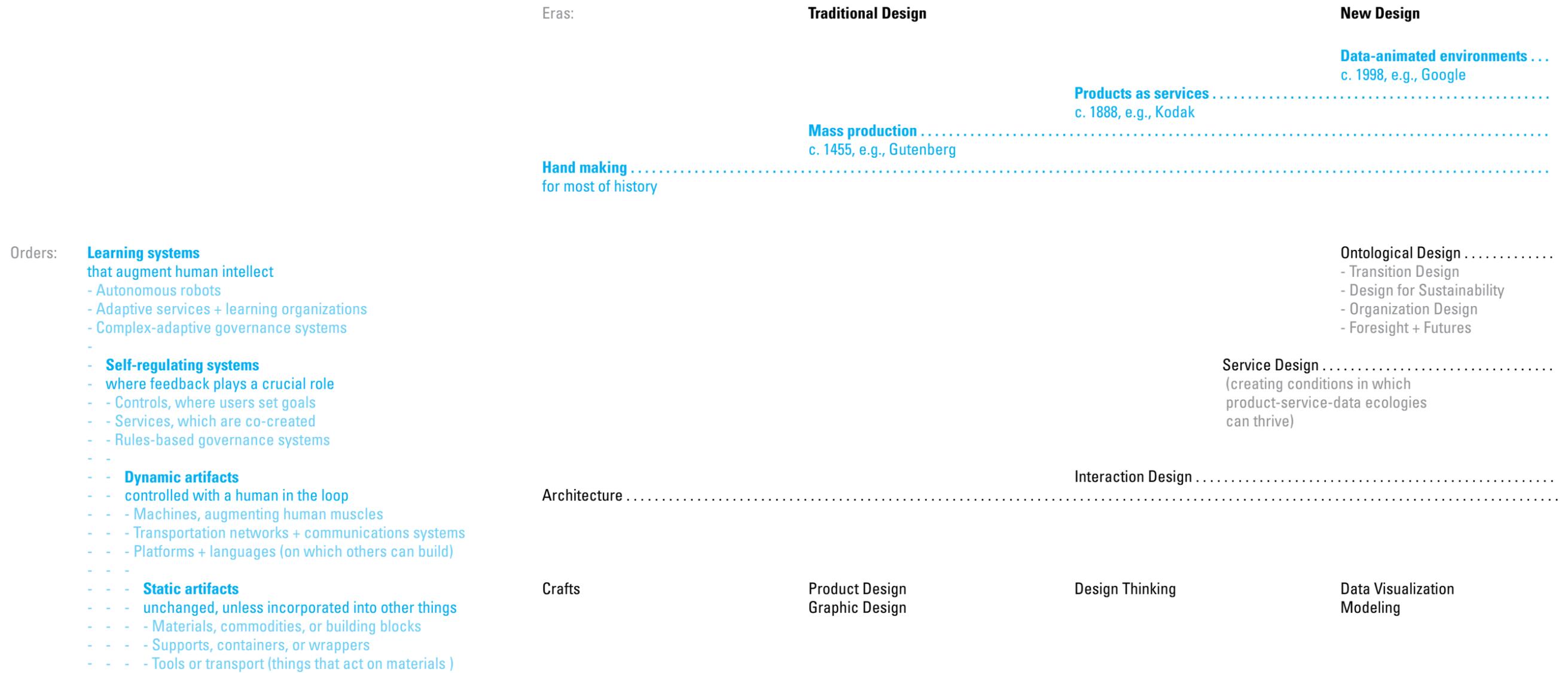
Information Design  
Interaction Design  
Service Design

A new paradigm for design education

# Understanding the New Design

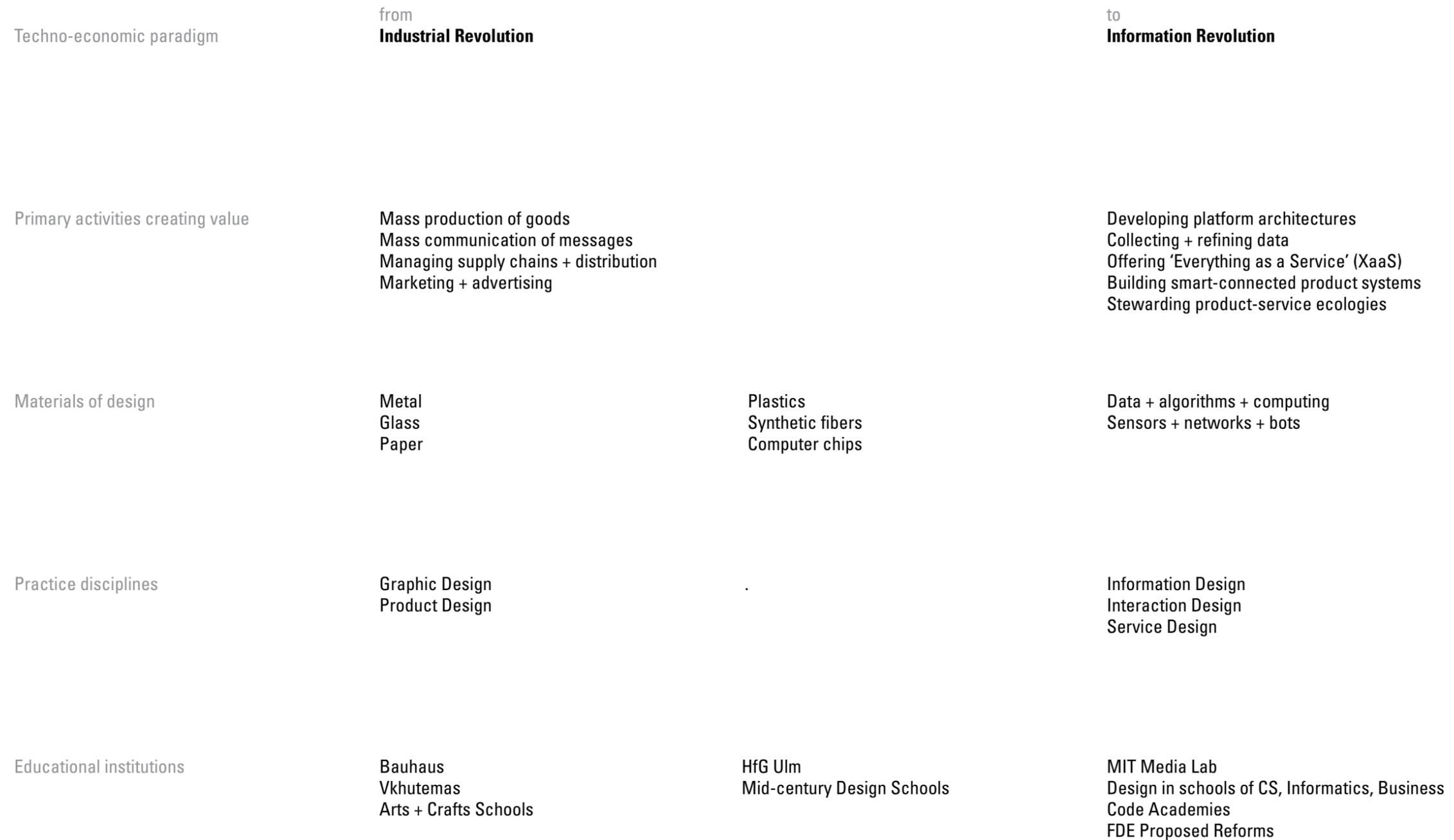
With the industrial revolution, designing separated from making.  
 As services subsumed products, designing increased in complexity.  
 And the information revolution has accelerated that trend.

Traditional design education was adapted to an earlier era.  
 In light of these process, we need to reassess design education.



# Major techno-economic paradigm shifts drive corresponding paradigm shifts in design practice + design education

Changes in technology lead to changes in the economy,  
which lead to changes in design practice,  
which lead to changes in design education.  
Lag creates opportunities and threats.



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Techno-economic paradigm	from <b>Industrial Revolution</b>		to <b>Information Revolution</b>		to <b>Ecological and Political Devolution</b>
Primary activities creating value	<ul style="list-style-type: none"> <li>Mass production of goods</li> <li>Mass communication of messages</li> <li>Managing supply chains + distribution</li> <li>Marketing + advertising</li> </ul>		<ul style="list-style-type: none"> <li>Developing platform architectures</li> <li>Collecting + refining data</li> <li>Offering 'Everything as a Service' (XaaS)</li> <li>Building smart-connected product systems</li> <li>Stewarding product-service ecologies</li> </ul>		<ul style="list-style-type: none"> <li>Relocating &amp; repairing infrastructure</li> <li>Conducting socio-economic triage</li> <li>Rationing nutritional resources</li> <li>Building regional interdependencies</li> <li>Stewarding natural ecologies</li> </ul>
Materials of design	<ul style="list-style-type: none"> <li>Metal</li> <li>Glass</li> <li>Paper</li> </ul>	<ul style="list-style-type: none"> <li>Plastics</li> <li>Synthetic fibers</li> <li>Computer chips</li> </ul>	<ul style="list-style-type: none"> <li>Data + algorithms + computing</li> <li>Sensors + networks + bots</li> </ul>		<ul style="list-style-type: none"> <li>Real time coordination technologies</li> <li>Human willpower, goodwill, reciprocity</li> </ul>
Practice disciplines	<ul style="list-style-type: none"> <li>Graphic Design</li> <li>Product Design</li> </ul>		<ul style="list-style-type: none"> <li>Information Design</li> <li>Interaction Design</li> <li>Service Design</li> </ul>		<ul style="list-style-type: none"> <li>Experience design</li> <li>Systems design</li> <li>Eventual design</li> <li>Biomorphic design</li> </ul>
Educational institutions	<ul style="list-style-type: none"> <li>Bauhaus</li> <li>Vkhutemas</li> <li>Arts + Crafts Schools</li> </ul>	<ul style="list-style-type: none"> <li>HfG Ulm</li> <li>Mid-century Design Schools</li> </ul>	<ul style="list-style-type: none"> <li>MIT Media Lab</li> <li>Design in schools of CS, Informatics, Business</li> <li>Code Academies</li> <li>FDE Proposed Reforms</li> </ul>		<ul style="list-style-type: none"> <li>Austral-Asian university research institutes</li> <li>Hong Kong Polytechnic University</li> <li>Nordic university design programs</li> <li>African entrepreneurial programs</li> <li>South Asian development academies</li> </ul>