

DSI'08

Generative Learning in design and business planning

**Professor Peter McGrory**  
**University of art and Design Helsinki TaiK**

*"vision is not only a founding idea but necessarily the resolution to ensure its realization"*  
(Jonathan Ive, Apple Computer inc.) i.e. strategic foresight

The ability to use foresight in order to make wise, insightful and imaginative choices is one of the most powerful capabilities of designers and organizations in a global economy.

**present** actions are guided by our interpretation of the **past**, and by our anticipation of, or aspiration for, the **future**.

### **input methods ...**

*contextual scanning — understanding stakeholder interests, users and contexts e.g. methodologies for user/consumer/customer observation and progressive enquiry*

*paradigmatic methods — understanding the cultural, conceptual and contextual basis through which information is acquired and decisions made*

### **throughput methods ...**

*analytic methods — identifying patterns and framing insights*

*synthesis methods — envisioning and exploring concepts, drawing interdependencies and relationships e.g. conceptualizing use*

### **output methods ...**

*creating and implementing solutions, including their underlying strategies, structures and processes*

*methods ... to envision complex cultural models, systems and applications which generate (really) new technical, social, environmental and economic infrastructures, resulting in what can be described as 'systemic level innovation'*

Chance (and opportunity) favors the prepared mind  
(Pasteur)

### **What is a Scenario**

Scenarios are cultural models of **risk** and **opportunity** that a group of people choose to:

- articulate visually, verbally (numerically))
- assess
- act upon

## Scenarios are a device to ...

Mobilize or trigger the individual and collective knowledge, skills, imagination and culture (i.e. similarities and differences in values, beliefs, attitudes, assumptions and behavior) of people within or available to an organization towards the future.

- Think about the future
- Create, communicate and contemplate these alternative futures
- Cross-check assumptions concerning possible alternative futures
- Structure perceptions about these futures
- Form the basis or premise for future thinking and action

It is important to remember that ...

### **scenarios are not**

predictions  
(probability)

a future reality

an end in themselves

variations around a  
mid-point or base case

snapshots of end-points

generalized views of  
feared or desired futures

### **rather, they are**

descriptions and depictions  
of alternative futures  
(possibility)

a way of foreseeing the future

a means to an end

significant,  
often structurally  
different views of the future

movies of the evolving dynamics of the  
future (change)

specific decision-focused  
views of the future

however different scenarios facilitate insight and foresight, but they also distort, they have strengths, but they also have inherent limitations. In creating ways of seeing, scenarios create ways of not seeing. There can be no single scenario that gives an all-purpose point-of-view. Remember scenarios are a means to an end and not an end in themselves.

The benefits of scenario-thinking in creative planning include:

- A more complete or informed understanding of the dynamics of change
- Greater consideration as to the range of opportunities (enablers) and obstacles (inhibitors) — drivers
- Reduced vulnerability to surprises
- Expanded range of design options
- More resilient yet flexible strategy

## Scenario are an effective means ...

- to intelligently challenge conventional practices and assumptions.
- To amplify and incite signal of change
- To conceptualize and embody information in innovative and appropriate forms.

In essence scenario-thinking and vision-building are a highly effective way to facilitate shared-understanding, personal empowerment, continuous self-organization and learning.

## Forecasting vs. Backcasting Approaches

### **Forecasting** (past/present—to—future)

This is essentially a extrapolative process based on known data, facts and values (ref., sensing—thinking) This is the same as driving a car by looking through the rear-view mirror (learning from the past).

Quote:

*the faster you drive (i.e. the faster the rate of change), the further your headlights must shine.*

### **Backcasting** (future—to—present/past)

This is essentially a interpolative process based on anticipated future needs and values (ref., intuition—feeling)

This is the same as driving a car by illuminating the road ahead looking through the windshield. It's wise to do and use both.

To better describe what underlies both forecasting and backcasting futures approaches or methodologies

taking for example forecasting the weather which is based on know time series data or patterns ... emphasis on existing knowledge i.e. to know

If we consider backcasting as an alternative and complimentary approach to forecasting we can imagine

what could be a desirable future situation, say if we see that it would be highly desirable for the sun to shine in the afternoon, ... emphasis on imagination i.e. to imagine

and then finding ways to achieve such objectives.

## Contextual observation and progressive inquiry

What is ... What are ... (present/past)

Present or current situation(s)  
to know  
Tacit and explicit knowledge  
(emphasizing sensing [S])

What if ...

Possible or desirable future situation(s)  
to imagine  
(emphasizing intuition [N])

What could ...What should (present/future)  
(ref., diagram)

- 1) observation and mapping
- 2) data collection and consolidation
- 3) reflection and analysis
- 4) concept generation
- 5) visualization, simulation and prototyping

### **User, use and non-use scenarios in the contextual design process ...**

The purpose of which is to identify, anticipate and satisfy individual needs and preferences in a given or imagined circumstance, incorporating ...

- 1) People** — incorporating aspects of the users physiological, sociological, and psychological characteristics
- 2) Places** — the users physiological, sociological and psychological environment i.e. 'space' including situations, conditions, climates and contexts of use
- 3) Practices and Procedures** — the activities they undertake and the tasks they will/could perform or not
- 4) Products** — the hardware, software, middleware, services and systems they could employ

**Cognitive Style ...** involves ones preference including emphasis and differences in information acquisition and decision-making processes

**Energizing** — ones preferred source of mental energy and interest

extrovision (E)                      introvision (I)

**Attending** — ones preferred way of gathering and absorbing information

sensing (S)                                  intuition (N)  
[forecasting]                                  [backcasting]

**Deciding** — ones preferred means of making decisions once information has been gathered or absorbed

thinking (T)                                  feeling (F)

**Living** — ones preferred approach to organizing oneself and others

Judgment (J)                                  perception (P)

**Disposition** — where one focuses ones mental energy

Obstacles  
(Ob)  
[dystopic]

opportunities  
(Op)  
[utopic]

(ref. PT framework) — de Bono perception exercise

## **Design and Business Foresight** (Designing the Future)

### **Integrated scenario-thinking and planning levels**

Macro or World-view Scenarios  
Policy Oriented Scenarios POS — Futures Research  
(Ref.: PESTE framework)

PESTE Analysis

- Political
- Economic
- Social
- Technological
- Environmental

Industry — Business Scenarios  
Design Oriented Scenarios DOS

User, Use and Non-use Scenarios  
DOS — contextual and user-centered design

Quote

*"the future is not independent of our individual and collective thoughts and consequent actions"*

### **Scenario Intent**

To en-vision platforms of possibilities

#### **Drivers of change**

—[ the creative challenge is to identify and recognize these critical drivers  
(including enablers and inhibitors)

#### **Megatrends and Weak Signals**

Choices and Chance  
Intuition and Inquiry

This section aims to illustrate the benefit of ...  
a ready—fire—fire—fire—aim—fire approach to design  
and business planning

- a) the value of linking magatrends with user, use and non-use scenarios
- b) the benefits of integrating forecasting and backcasting approaches
- c) the importance of acknowledging distinct differences

in cognitive-style and psychological types  
(get a copy of the Swedish researchers article which maps developments  
in futures research )

Even if you have a pre-determined trend or mega-trend, one has to be quite imaginative (i.e. creative) to ascertain how this trend or mega-trend could (vs. would) impact on your business, particularly as to what implication it could have on the design and development of new products, services and systems.

demographic change — ageing population — health care?  
— higher number of educated?

**trend?** ... a line of general direction or movement; a prevailing tendency or consistent pattern over time

**foresight** ... the human capacity to think ahead and consider, model, create and respond to future possibilities or eventualities

its worth keeping-in-mind ... each of us navigate the present by means of tacit models of the past & the future.

Where we believe we came from & where we believe we are going determines the majority of our in-present actions

**why trend foresight?** ... the value of trend foresight lies in the capability to acquire, create, accumulate, share and exploit the individual and collective knowledge, skills, imagination and culture of people — both within an organisation, & available to it

**trends** ...

- originate anywhere & everywhere
- are codified signals for change
- offset or instigate other trends
- trigger counter-trends
- *e.g. fast food — slow food*

... trends are essentially driven by human perception & potential

**identifying trends** ...

involves taking existing elements and combining them in different ways for new purposes

is essentially about making connections, drawing relations, associations or inter-dependencies, as well as their strategic & operative implications

the best way to create the future is to "believe-in-something"  
... *but not everything*

the alternative? ...

"believe-in-nothing" ... *see how far that gets you*

" *no wind favours he who has no destined port* "—[Montaigne

" *the best way to predict the future is to plan it* "—[Peter Drucker

" *we may never know enough to take the chance worth taking* "  
—[John Maynard Keynes]

" *the things always happens that you really believe in; and the belief in a thing makes it happen* "—[Frank Lloyd Wright]

" *well done, is better than well said* "—[Benjamin Franklin]

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Ref., Manzini Social change —vs.— technological change matrix

low(er degree of difficulty, inertia and/or risk

low social and low technological change

low social and high technological change

high social and low technological change

high social and high technological change

high(er of difficulty, inertia and/or risk

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- o Clarity and Commitment — focused & empowered
- o Communication and Collaboration — informed & enabled
- o Competence and capability — created and leveraged
- o Culture — aligned and shared
- o Compensation — appreciated and rewarded

## **Empowerment**

The process whereby individuals and groups discover their autonomy and power and become positively able and willing  
To use it to create and shape the future.

Empowerment implies:

- a) Self-determination
- b) Meaning
- c) Competence
- d) Impact

## **Motivation theory and practice**

People tend to lose their motivation when ...

they are not involved  
they cannot participate in decision-making  
they are not allowed to think for themselves  
they are not kept informed of relevant information  
they do not have responsibility or authority  
their work or contribution is not recognized, acknowledged or valued  
there is little incentive i.e. challenge, reward or encouragement

**Analysis:** making sense of things by breaking them into their constituent parts

**Synthesis:** making sense of things by seeing how they constituent parts interact/ interface/interrelate with one another.

**Systematic:** methodically or thinking in a methodical way.

**Systemic:** Interacting with each other as in a system or taking both components of a system / situation and the way they interact with one another into consideration

1. of or relating to systems or a system
2. relating to or affecting the entire body or an entire organism

**Systemic thinking** involves a combination of analytical thinking (understanding the components) and synthetical thinking (understanding the interactions between them).

### **systemic innovation**

A network organization is the institutional form required to undertake systemic innovation.

Designing Systemic innovation — the capability to create new stakeholder configurations and develop an integrated system of products and services

Cross-pollination of ideas among venture development stakeholders is the key to success in the era of systemic innovation

### **evaluation Tool #1** (scenario screening)

It is important to only select and elaborate scenarios which meet the following criteria:

are they ...

- plausible, credible, believable
- internally consistent i.e. logical cause>>effect relation
- structurally different i.e. trend (globalization), counter-trend (tribalism)

do they ...

- challenge conventional wisdom i.e. are they novel, provocative
- possess decision-making value i.e. have clear strategic implications and structural consequences

According to Kotter (1996), typical characteristics of an effective vision includes ...

**Imaginable** — it conveys a picture of what the future could and would look like given various factors including how, why and in what circumstances they could or would prevail



**Desirable** –it appeals to the medium and long-term interests of stakeholders i.e. employees, customers, suppliers, shareholders, and other interested parties who will be influenced or affected by, or impacted on, given these circumstances

**Feasible** — it comprises of realistic and attainable goals

**Focused** — its clear enough to provide guidance in decision-making on a strategic and operative basis

**Flexible** — its adaptive or versatile enough to allow for individual initiative and alternative response in light of changing conditions

**Communicable** — it can be clearly and convincingly conveyed (including illustrated or illuminated) in five-to-ten minutes

### **evaluation Tool #2** (effective vision)

is it ...	does it ...
• imaginable	convey a picture of what the future could look like
• desirable ...	appeal to the long-term interests of key stakeholders
• feasible ...	comprise realistic, attainable goals
• focused ...	provide guidance in decision-making
• flexible ...	allow for individual initiative and alternative response in light of changing conditions
• communicable ...	enable the vision to be successfully explained in five-minutes

### **evaluation Tool #3** (strategic significance)

To assure strategic significance the identified customer benefits should be assessed according to the following criteria (ref.: Hamel and Prahalad):

does it (or do they):

- supply significant and perceivable customer benefits, benefits which are distinctive and desirable?
- apply across a variety of applications, product generation, markets and even businesses?
- prove difficult for competitors to copy or imitate

## MegaTrends — Lifestyle (Social) Trends

**Feminization** — a narrowing of the distinction between male and female behavior, and an ascendancy of values traditionally regarded as 'female'

**Hedonism** — guilt free indulgence, and a backlash to 'political correctness'

**Spirituality** — a search for meaning outside of, and beyond materialism.

**Tribalism** — the search for group identity, a reaction to globalization.

**Fusion** — the mixing of values and styles from different cultures.

**Individuality** — the search for opportunities for self-expression.

**Growing up fast** — the compression of the childhood years and the fast move towards an adult life.

**Staying alive** — the aging of the population and the active search to prolong life.

**Down—seizing** — freeing quality time through highly-efficient working and service practices.

**Fear** — a mistrust of big institutions such as government and multi-national corporations.