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	rather, they are
predictions (probability)	descriptions and depictions of alternative futures (possibility)
a future reality	a way of foreseeing the future
an end in themselves	a means to an end
variations around a mid-point or base case	significant, often structurally different views of the future
snapshots of end-points	movies of the evolving dynamics of the future (change)
generalized views of feared or desired futures	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, socio-logical, 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   opportunities
(Ob)   (Op)
[dystopic]   [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 Druker

" 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

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

--

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
their 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 <u>analytical thinking</u> (understanding the components) and <u>synthetical thinking</u> (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 stake-holders

- 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

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.