Improve Everything Always
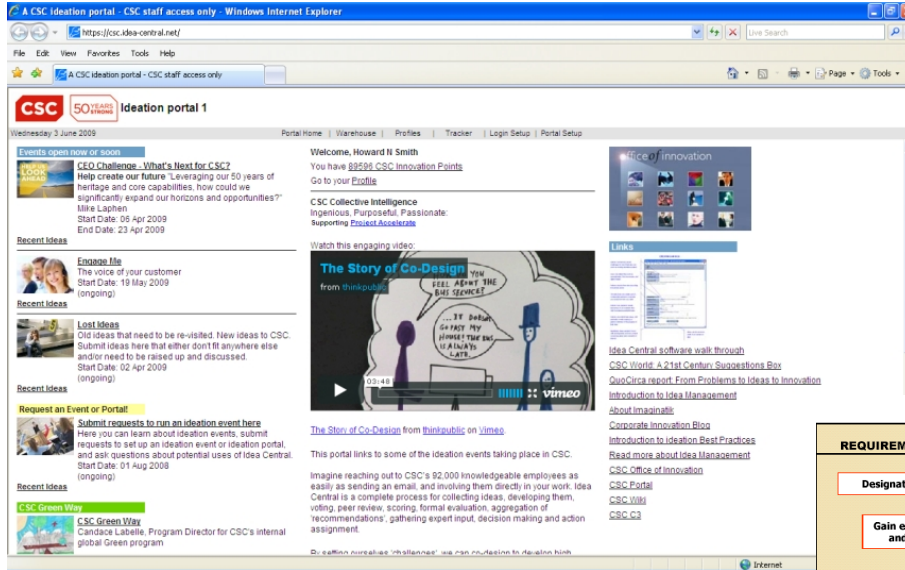
Howard Smith

CSC Collective Intelligence

Founder, Southbeach
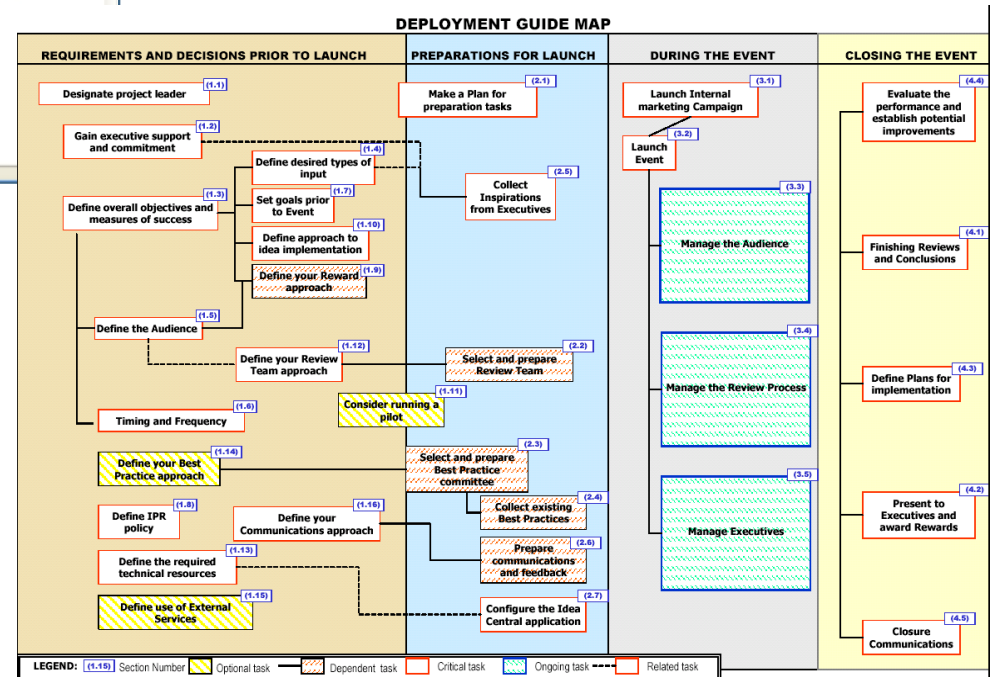
hsmith23@csc.com

Where do I get the latest/complete version of these slides?

- http://www.southbeachinc.com/presentations.html

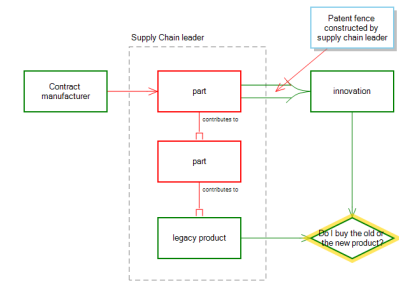# My day job .... CSC Collective Intelligence

Idea Central
www.imaginatik.com

Large scale collaborative
problem solving/ideation

Our new project: Southbeach Notation

- A 'new' visual notation

- Diagrams that 'mean' something

- Inspired by and extending 'TRIZ'

- For describing 'innovation' in anything

- Bridging technical and business domains

- 1:1, workshop, communication

- Fostering interdisciplinary collaboration

- Many 'applications'
  - Alignment, problem solving, failure analysis, robust design, knowledge management

- Situational modelling, joined up thinking

- Not a 'methodology' – roll your own!

- Bringing diagrams to life

- Driving improvement, change, improvement

- Amplifying and complementary to other notations

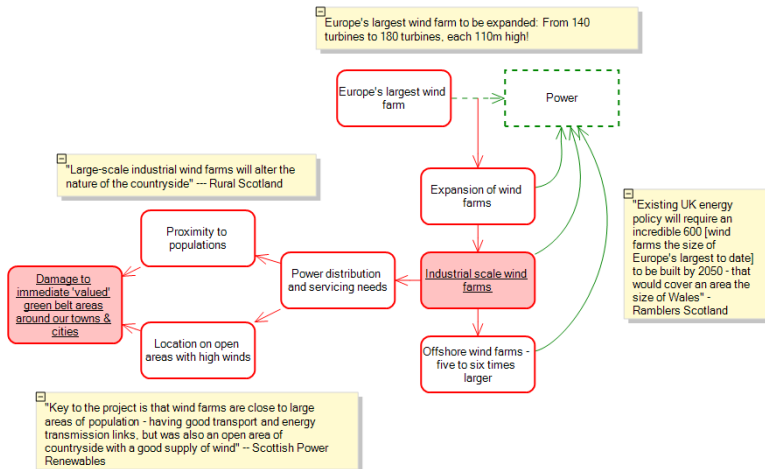# Executing a process is one thing – improving it is another
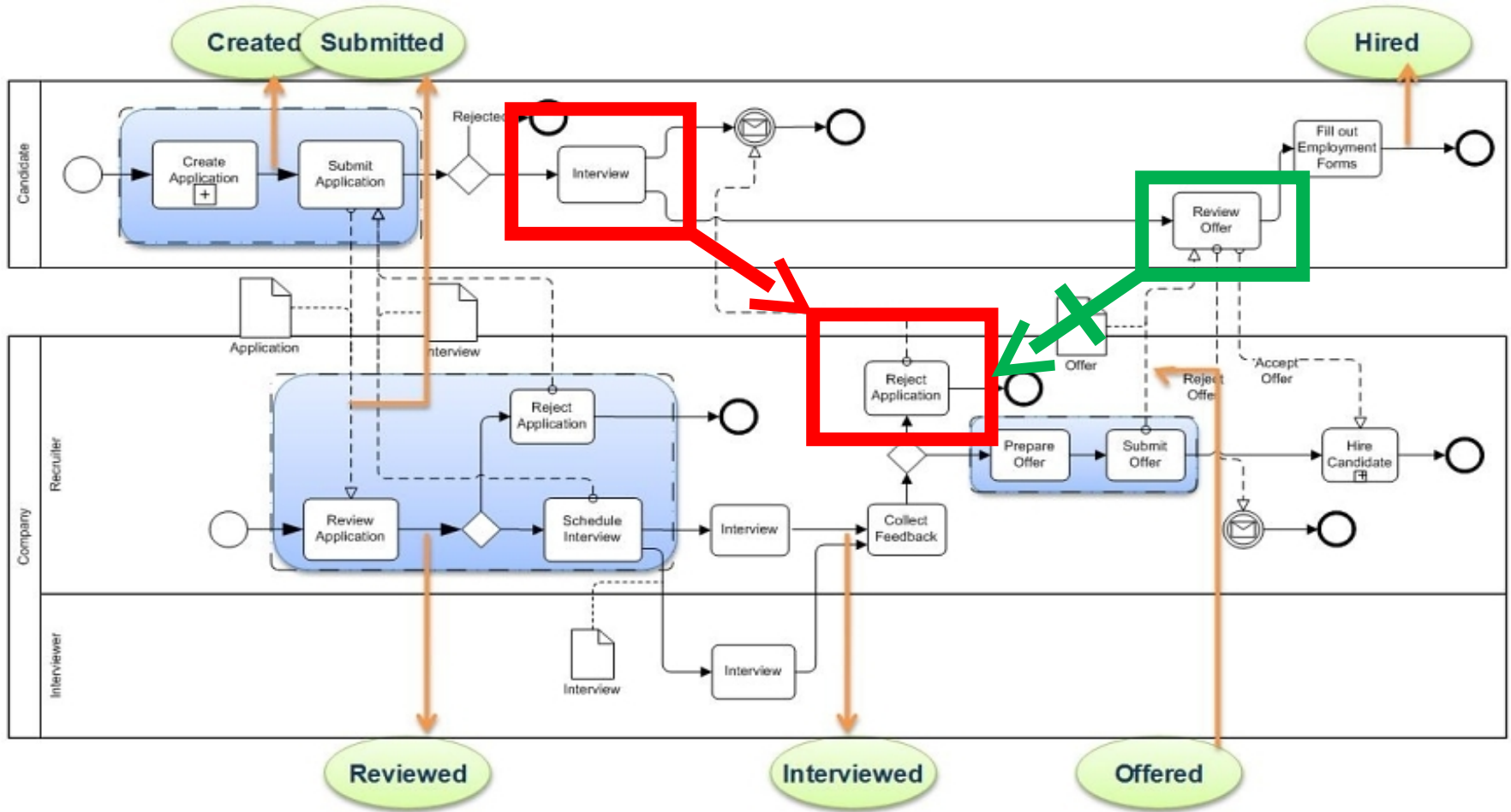
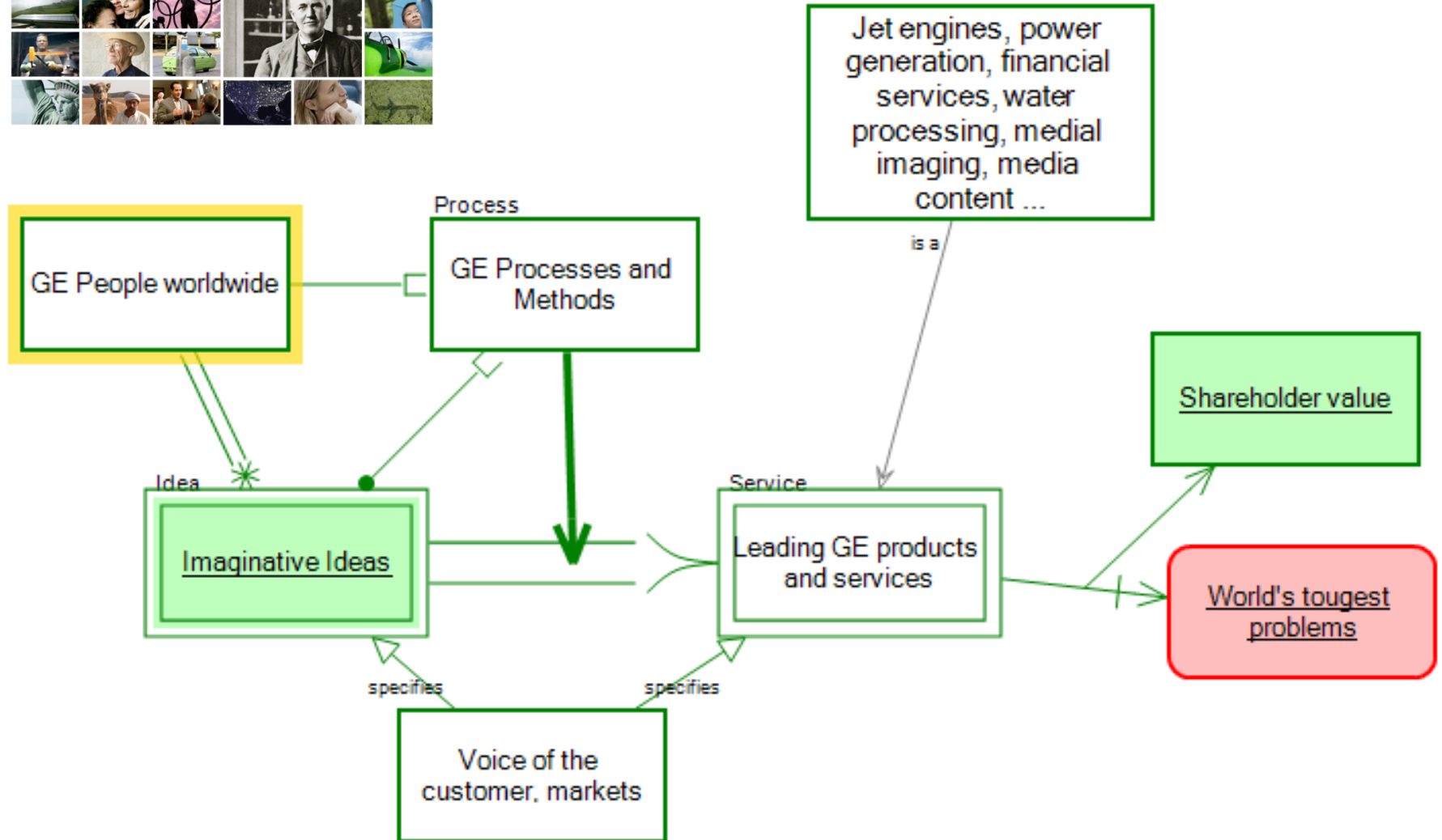*A BPMN model – marked up with Southbeach Notation*

Why the name?

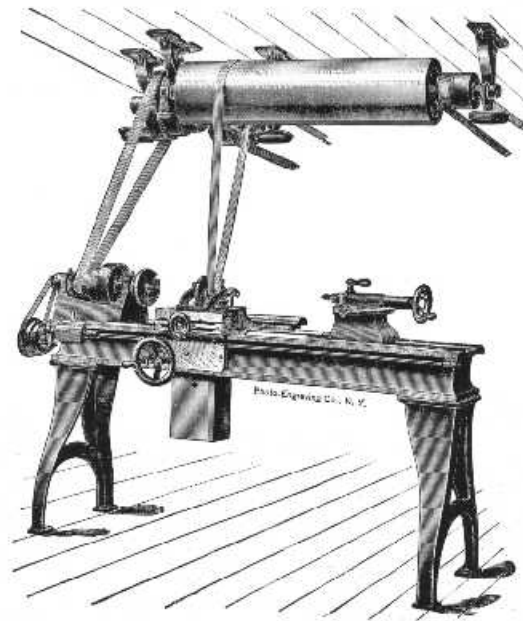- Drawn in the sand, Southbeach, Miami, FL, June 2005

A Southbeach model of GE

Step Back in Time

Where did the BPMS come from?

1900 - Frederick W. Taylor

Innovative business practice plus new technology

Carl Barth

1950 - W. Edwards Deming

Innovative business practice plus new technology

**Walter Shewhart**

1970 – Computers in the office: "glorified adding machines?"

"Don't let that Mr. Skinner hear you say that. He says a computer is an instrument of the imagination. He says that with another computer, me and Miss Glazier he could run Credit and Settlement single-handed."

– Miss Prothero, from Alan Bennett's, Office Suite

Tools = Annoying new gizmo
OR productivity + complexity buster

Can a person extract the cube root of 9834752345624563476?
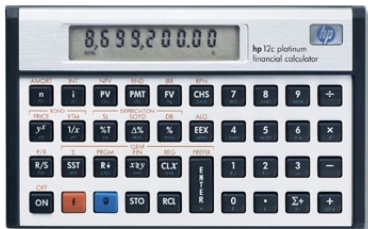
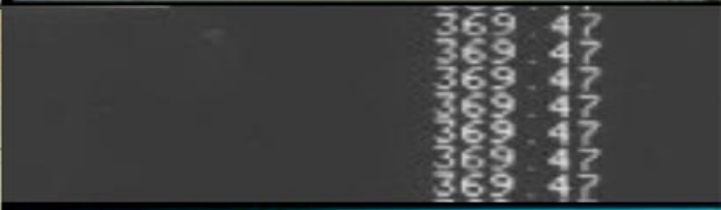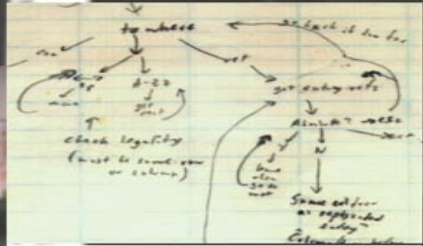|	
1000 years ago	Nobody
500 years ago	Only a genius
50 years ago	A long and difficult calculation
Today	Use a calculator, push a button

The Vision for the BPMS?

VisiCalc for Business Processes !

"If I were you, I'd raise a P24D …"

P24D = Request for IT-Project Prioritization Review

Corp "IT"

9 Months Later ...

Its not what I need now
Its not what I asked for then

IT: What are you doing?

BUSINESS: Modeling the business processes we need?

IT: Why are you doing that? Just specify the user interface and we'll take care of the rest. No need for you to get involved in these details.

BUSINESS: But this is the first time we have been able to express requirements so they won't get distorted when implemented.

IT: It won't work, we cannot be responsible for the model you are creating, we will need to translate it into our architecture.
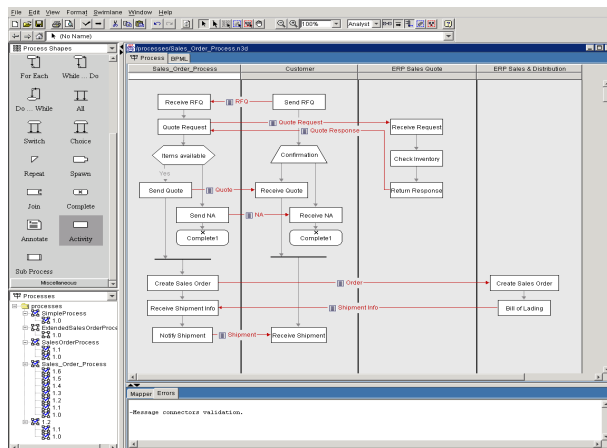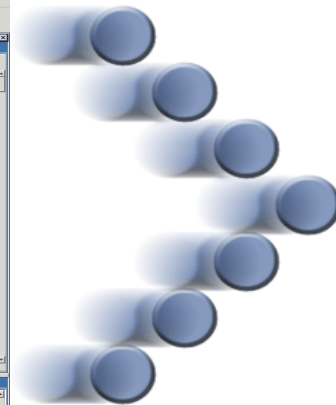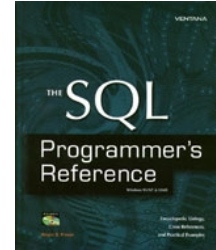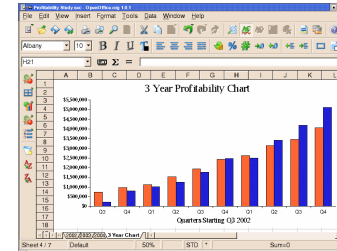
BUSINESS: In that case,

Empower the power users

A BPMS analogy: CAD/CAM for the IT Shop
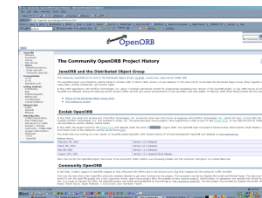# Key concept: <u>Design Driven Architecture</u>

Seeds of the implementation idea … 1999 …
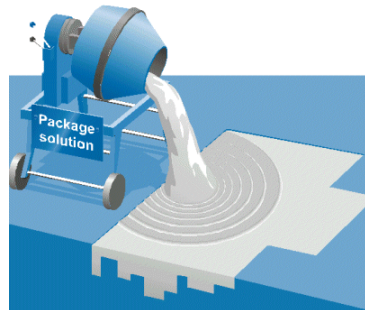

"Pi was not so much in the sky, but in the air …"
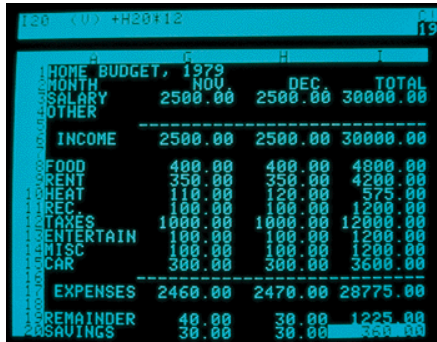
Value = invention + scale

Spreadsheet   RDBMS   BPMS

Innovation

+   +   +

Platform

The PC   Unix   Web Services

Time line

230 members at height of BPMI.org

- 1999 Intalio Inc. founded
- Creates ecolab.org
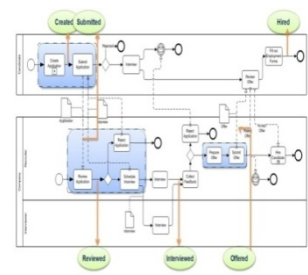- 2000 BPMS white paper
- 2001 CSC LEF studies convergence of BPM systems
- 2001 Formation of BPMI.org (CSC, Intalio, others)
- 2001, BPML 0.4
- 2002, BPML 0.8
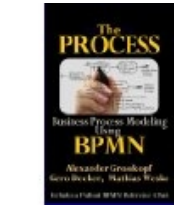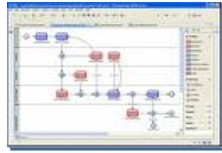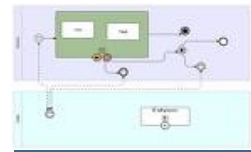- 2003, The Book: BPM - The Third Wave
- BPMN
- 2005 OMG acquires BPMI.org
- 2006 Open source BPMS
- 2008 50,000 users, 500 paying customers in 52 countries

BPMN is everywhere!
But who can execute at enterprise/cloud scale?
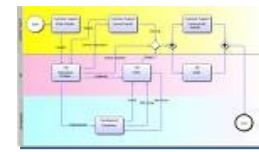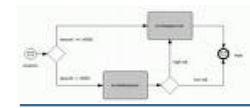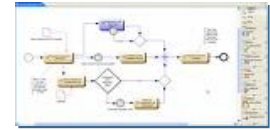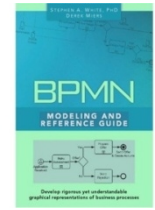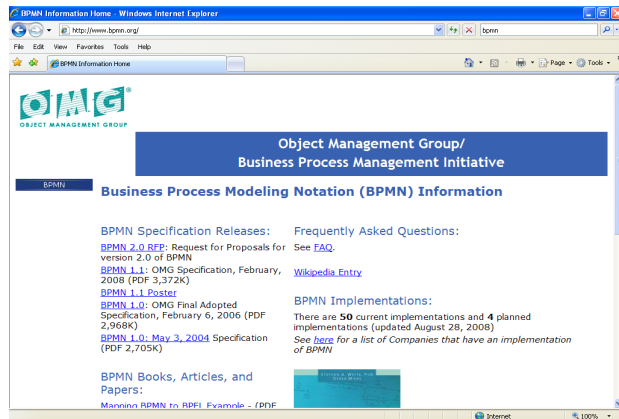
Complete, executable, formal semantics, standardized

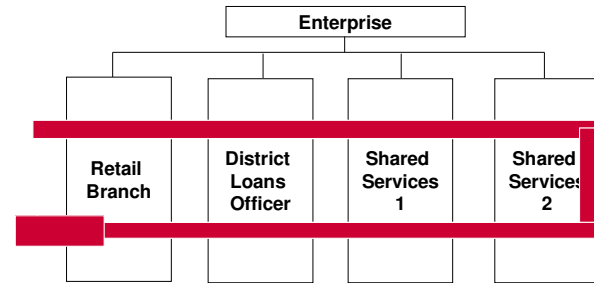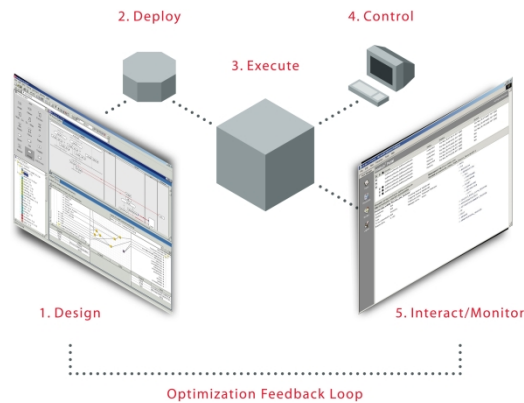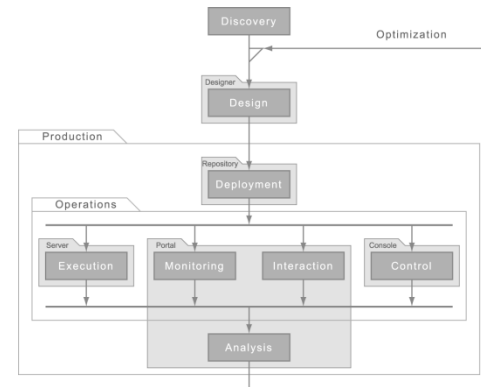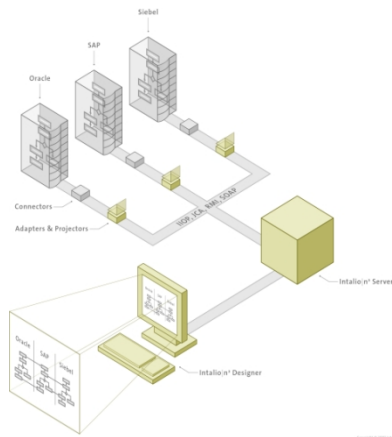# The Result – Direct from design to execution

1. Straight-through process management

2. End to end process enablement

3. Reuse of existing IT infrastructure

4. Full process lifecycle management

It works! Case studies and commentary

From CIO to CPO via BPM:
The Next Generation of Enterprise Automation

A CSC White Paper
September 2005

From CIO to CPO via BPM

THE NEXT GENERATION OF ENTERPRISE AUTOMATION

CSC.COM   CONSULTING   SYSTEMS INTEGRATION   OUTSOURCING

CSC
EXPERIENCE. RESULTS.

Level of ambition

Innovation
- New product development
- Service innovations
- Flexibility/agility
- Mass-customization
- Profit retention strategies
- Enabling innovation process
- Coping with complexity
- Coping with growth
- Scaling up operations
- Entry to new markets

Productivity
- Productive knowledge work
- Productive clerical work
- Economies of scale
- Cycle time reduction
- Enabling self-service
- Employee satisfaction
- Tighter coordination
- Tracking important events
- Coping with workload
- Just-in-time strategies

Lean
- Increased efficiency
- Reduced resource utilization
- Lower costs
- Reduction of waste
- Integration/migration
- Managing unpredictable work
- Eradication of duplication
- Automation of manual tasks
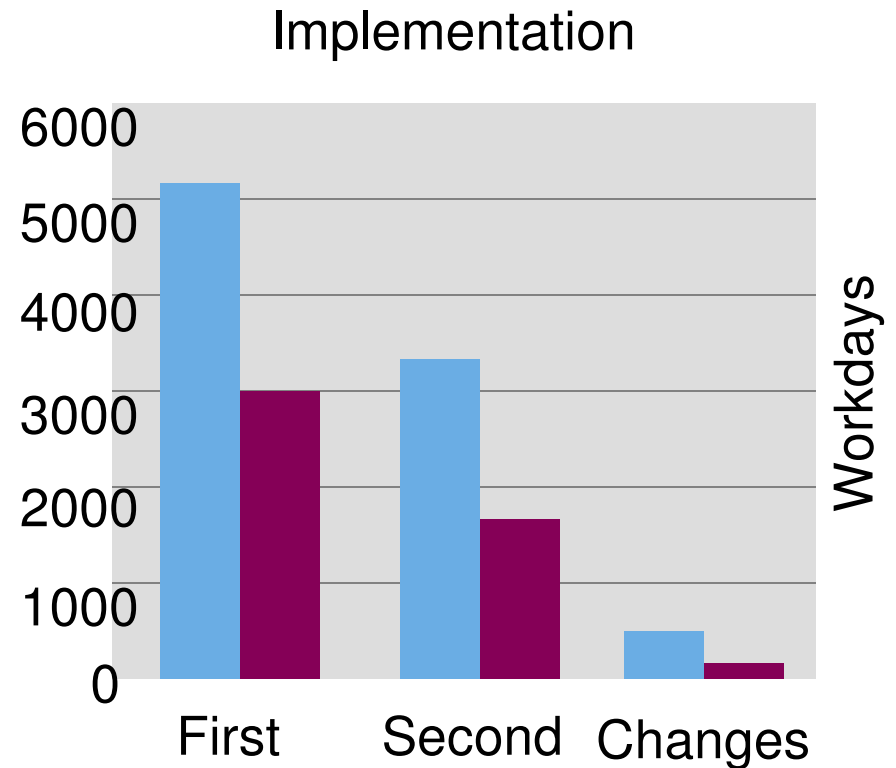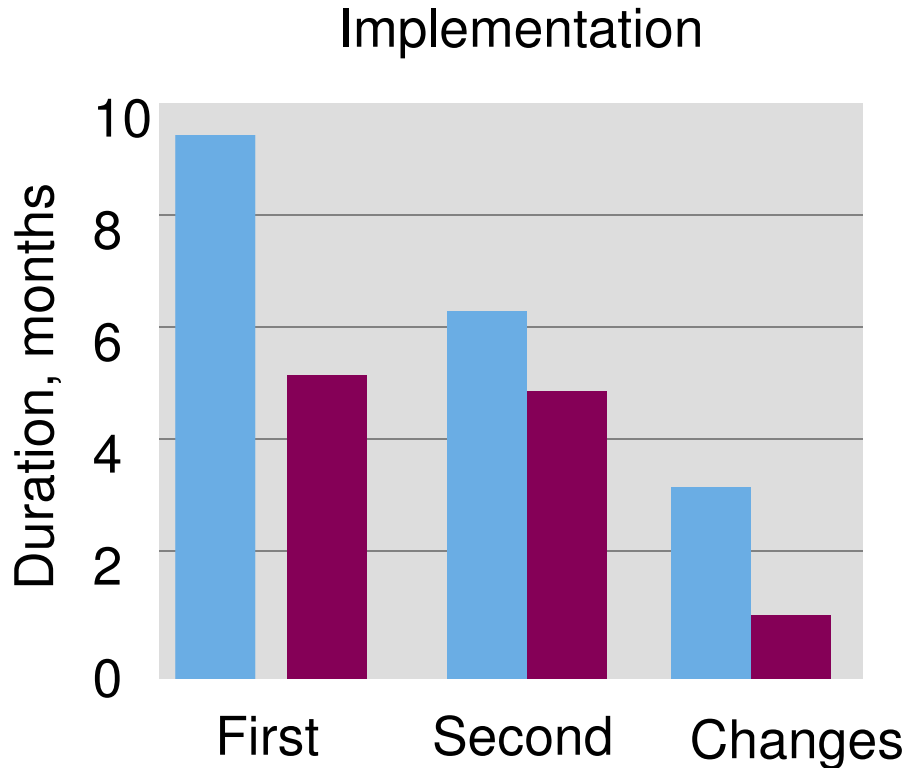- Reconciliation
- Consolidation

Quality
- Increased reliability
- Greater compliance
- Reduction of exceptions
- Fewer errors
- Greater discipline
- Consistency
- Transparency
- Assurance/security

http://www.csc.com/features/2005/51.shtml

Impact of BPMS - Fortune 50 Case in Oil Industry
Customer data

Implementation

Implementation

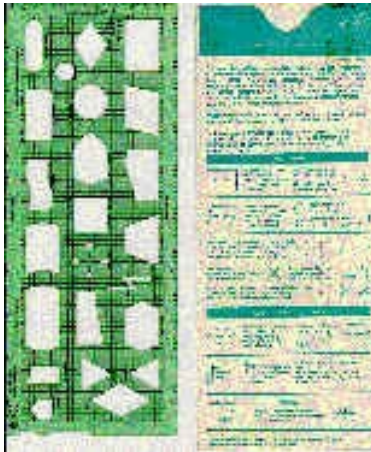Traditional approach

BPMS approach

Second: Builds on generic base applying localization
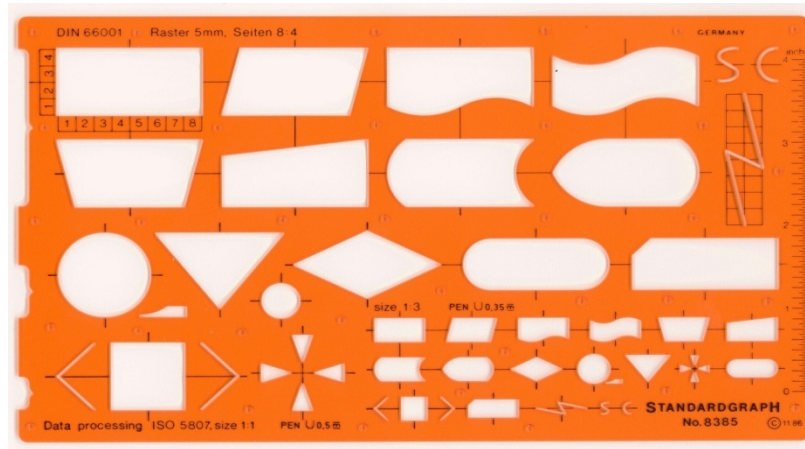Process change: Global template across multiple locals
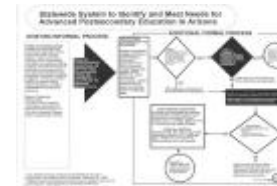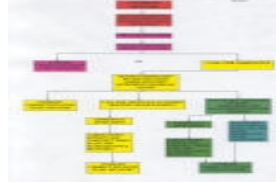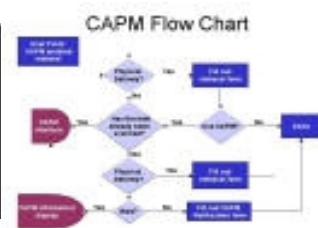
Jump Forward

Southbeach Notation

Who remembers these?

Tacky
cardboard
sleeve

We all draw diagrams. What do they mean?
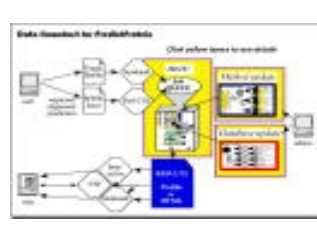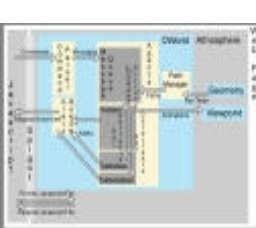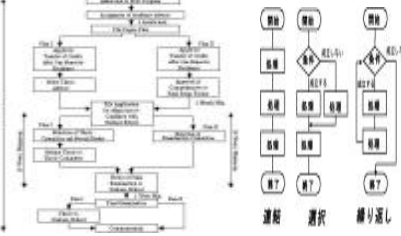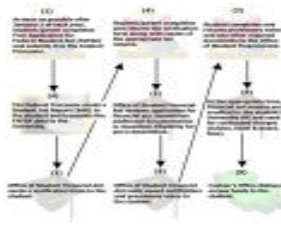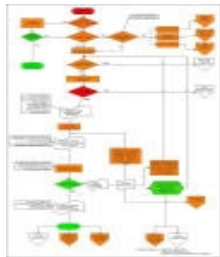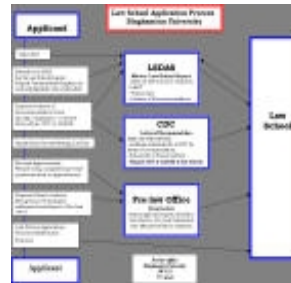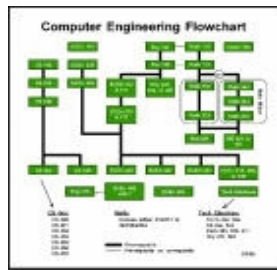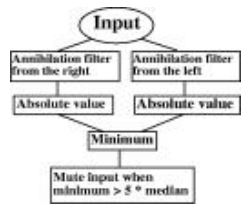
What Innovation Is

Innovation has to be the reliable business process by which firms create significant value from all sources of creativity and knowledge

Stuff → **Improved Stuff**
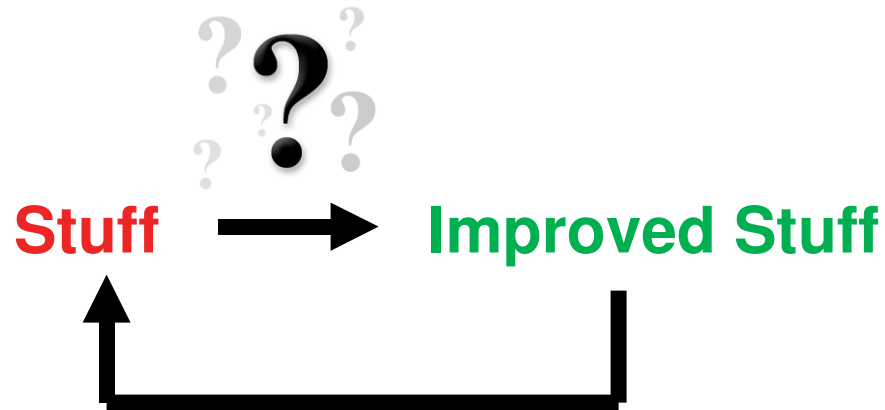
Stuff can be ...
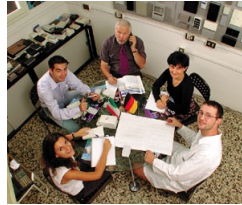
Products   Services   Solutions   Processes   Organizations   Ideas
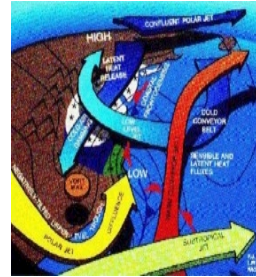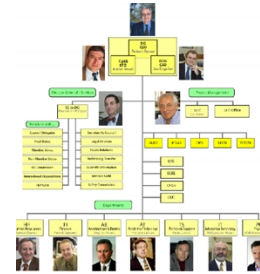
Stuff → **Improved Stuff**

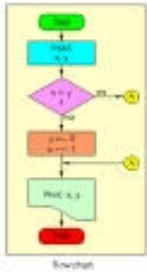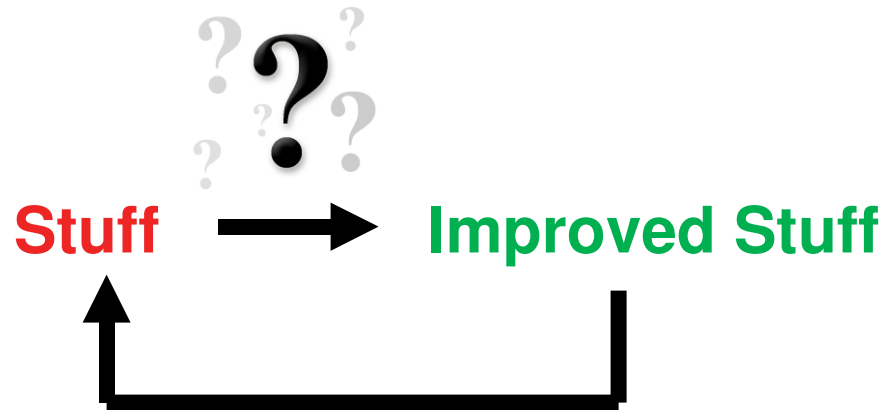# What I believe: The innovator is a problem solver.

- A special place in the mind? OR
- Plain old-fashioned hard work?

| Direction | Process Improvement | Problem Solving |

CSC White Paper: "What Innovation Is," H. Smith, http://www.csc.com/features/2004/57.shtml

Could there be a convergent method for 'innovation'?

Scientific methods

Design methods

Operations methods

Marketing methods

Sales methods
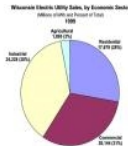
Etc.

?
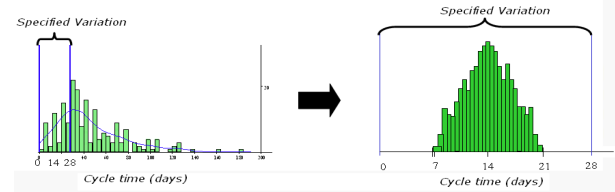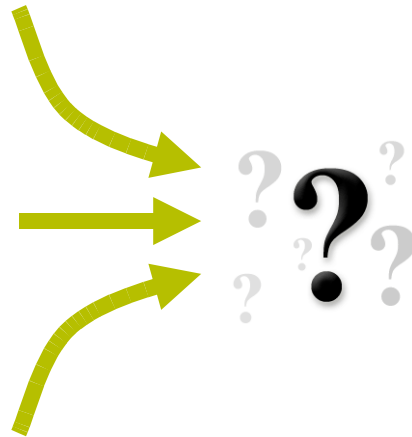
Quality Movement

1950 Widgets

1960 Manufacturing

1970 Operations

1980 TQM

1990 Six Sigma Processes

2000 DfSS, TRIZ ...?

Everything is useful <u>and</u> harmful

Personal transport

Freedom of movement

Pollution

Useful

Harmful

Is it useful or harmful ?

We call this 'decomposition by perspective'

Analogical modelling by perspective

- **A produces B**

- Synonyms
  - Provides, causes, initiates, increases, exaggerates, grows, increments, enhances, magnifies, heightens, deepens, results in, outputs, returns, reveals ...
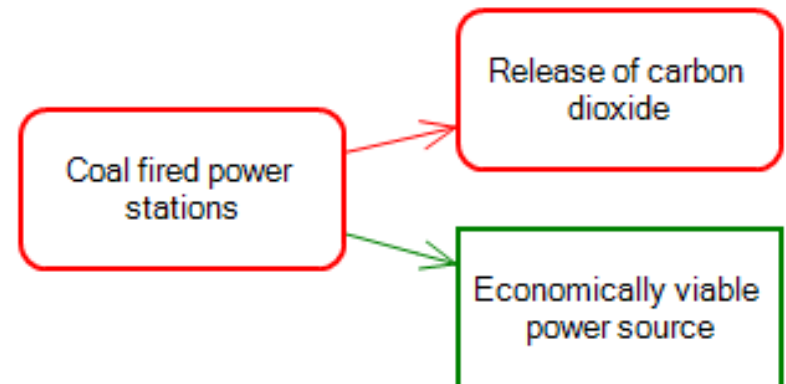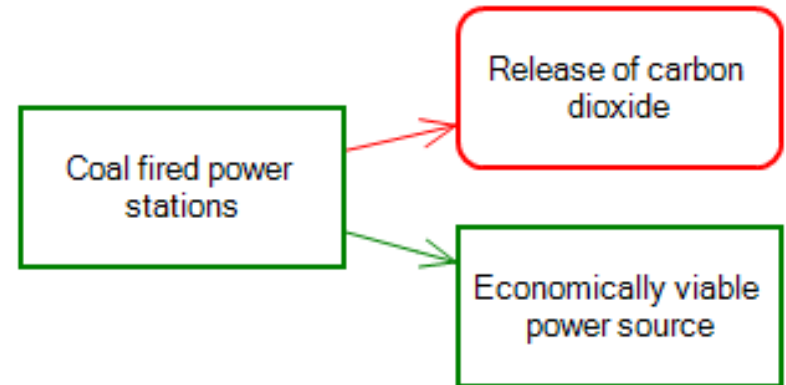
To whom are things useful and harmful?

Customer
Supplier
Citizen
Government
Child
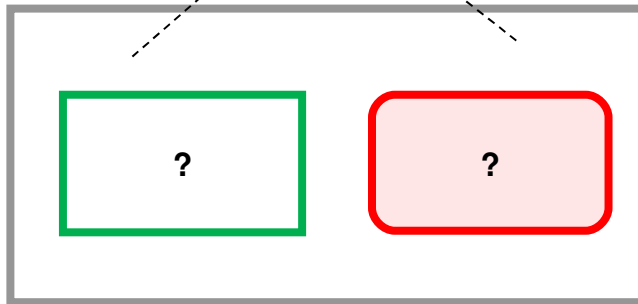
To you   **To me**

Useful or harmful ?

'Separations' enrich perspectives
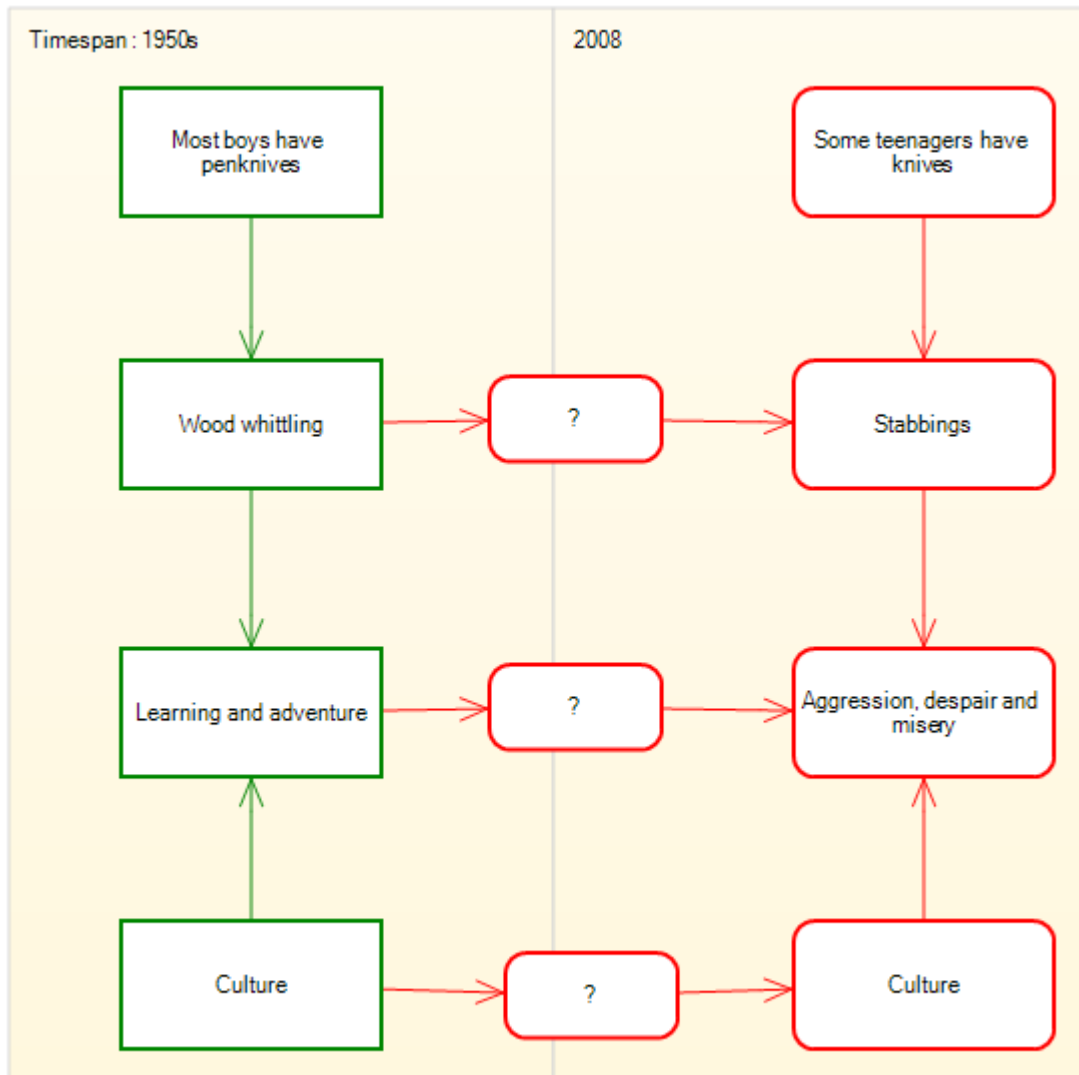
- Separate in time, space, aspect, role, conditions, perspective etc.

- One or two degrees of separation

- Swim lanes, pools, panels, grids

- Consultants love their 2x2s!

Aspects
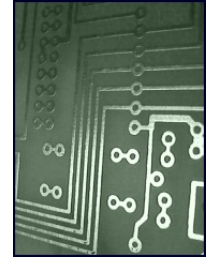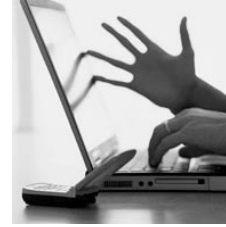
Brand   Experience   Usability   Design   Technology
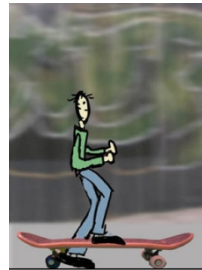
Performance   Function   Market   Business model
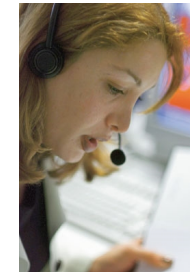
Manufacture Delivery   Service   Support

To improve, we must decompose in many ways

Aspects

Agents, actors

Perspectives

Useful

Harmful
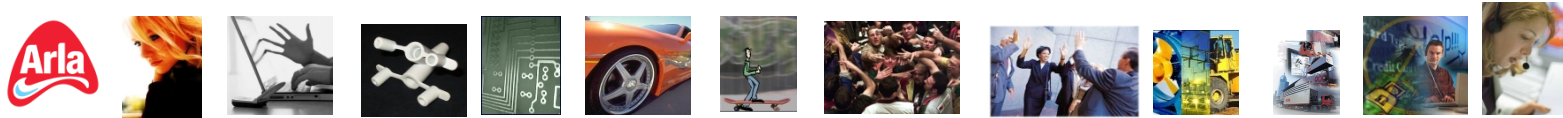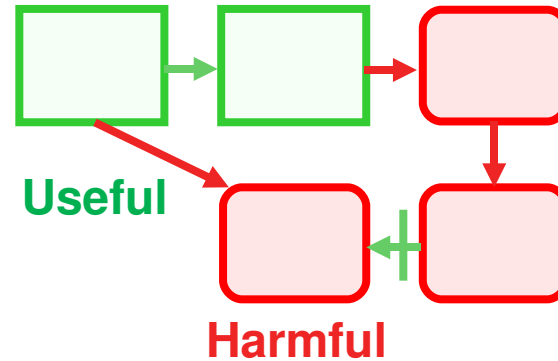
Southbeach vocabulary

- Developed by analysing many other diagrammatic styles

- Complete 'enough'?

- Adopts common conventions, where possible

- Flip chart friendly
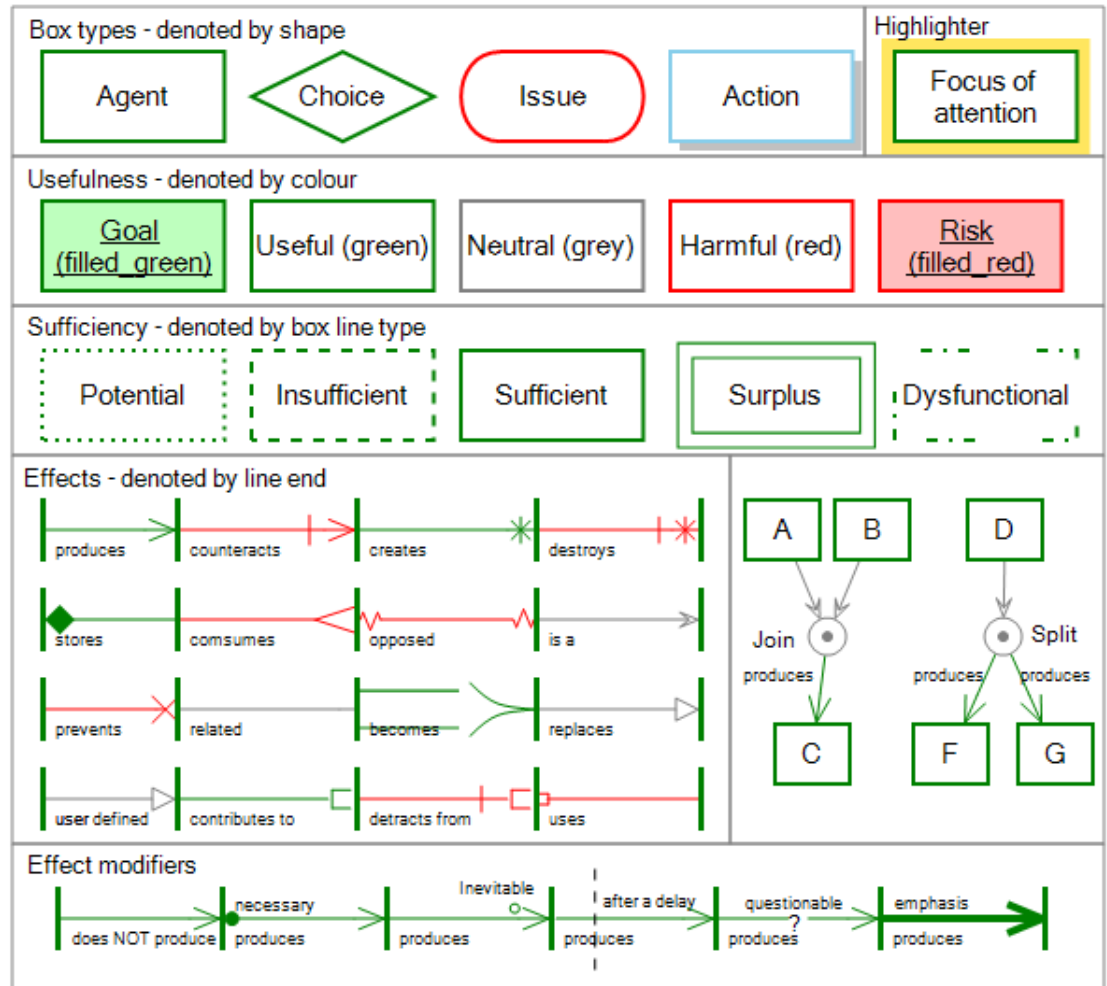
http://www.southbeachinc.com/quickguide.html

Effects

- Carefully chosen to model 'the world'

- Modifiers:
  - Potential, insufficient, excessive, dysfunctional, required, inevitable, delayed, questionable, negation, emphasis

- Expressive

- Synonyms:
  - E.g. Stores=accumulates, aggregates, stockpiles ..

To illustrate the different effects that Southbeach can model, all examples in this quickguide have been taken from the Green Agenda
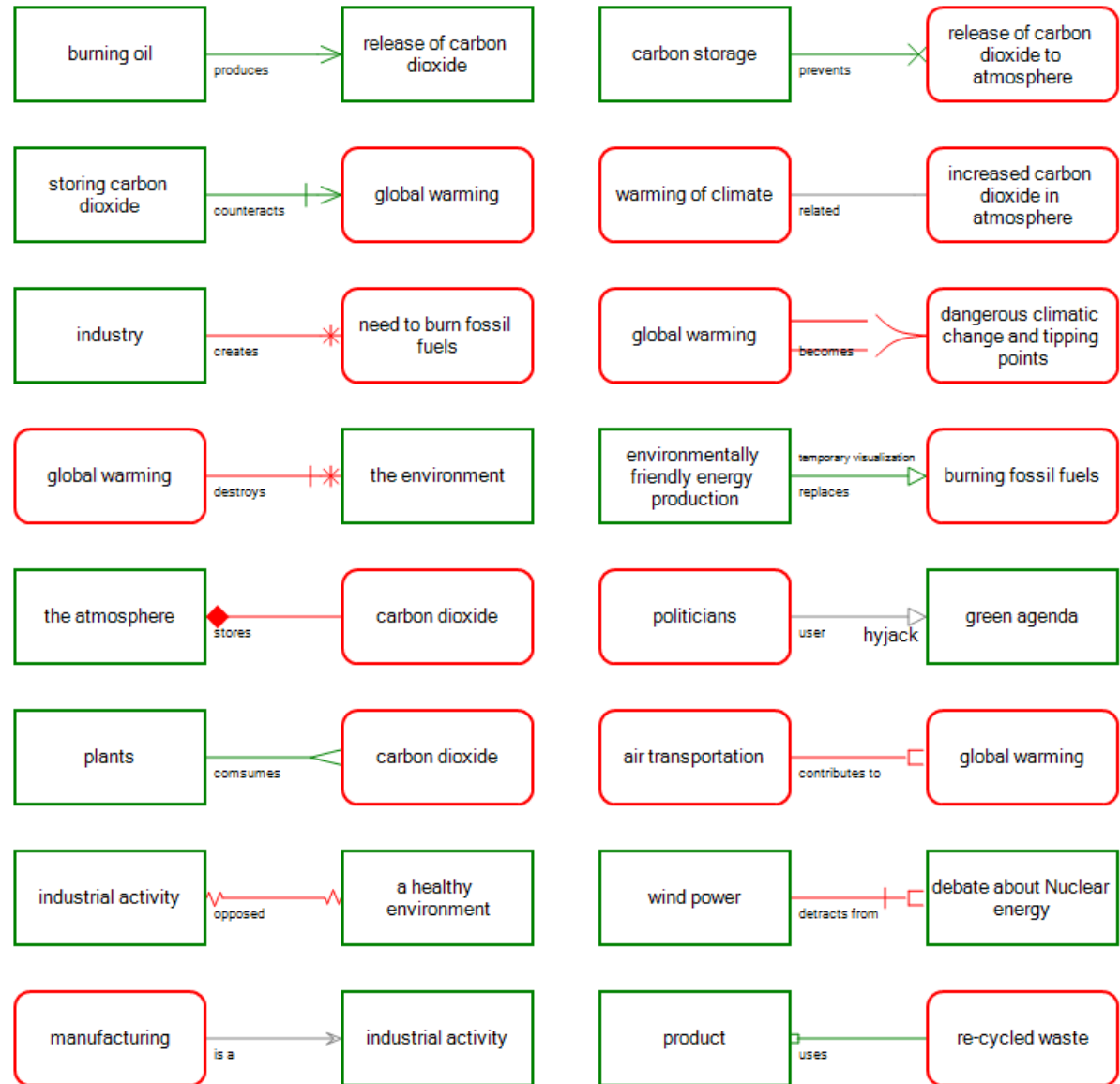
So what!
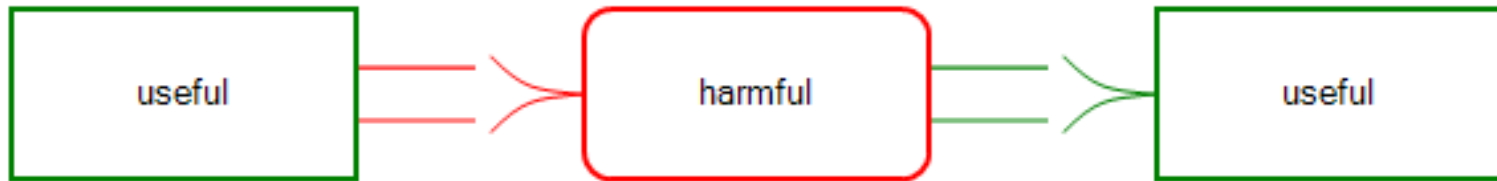
Case study

- Helped a large bid team reach the understanding and consensus necessary to create and submit a proposal that won them a 2B$ contract

- Team members were previously 'unaligned' – blocking progress to deadlines

- Diverse 'perspectives' (significant disagreements) on 'win themes' stymied integration of the proposal and development of the executive summary

- No aligned view of stakeholders – supplier/customer

- Client touch-point personnel were changing - complaints

- Need to 'up the game': Demonstrate a new level of understanding of customer requirement

- Southbeach 'perspective alignment' methodology used

- Also: benefit of 'shared spaces' – single point of truth models

Plug in the solutions
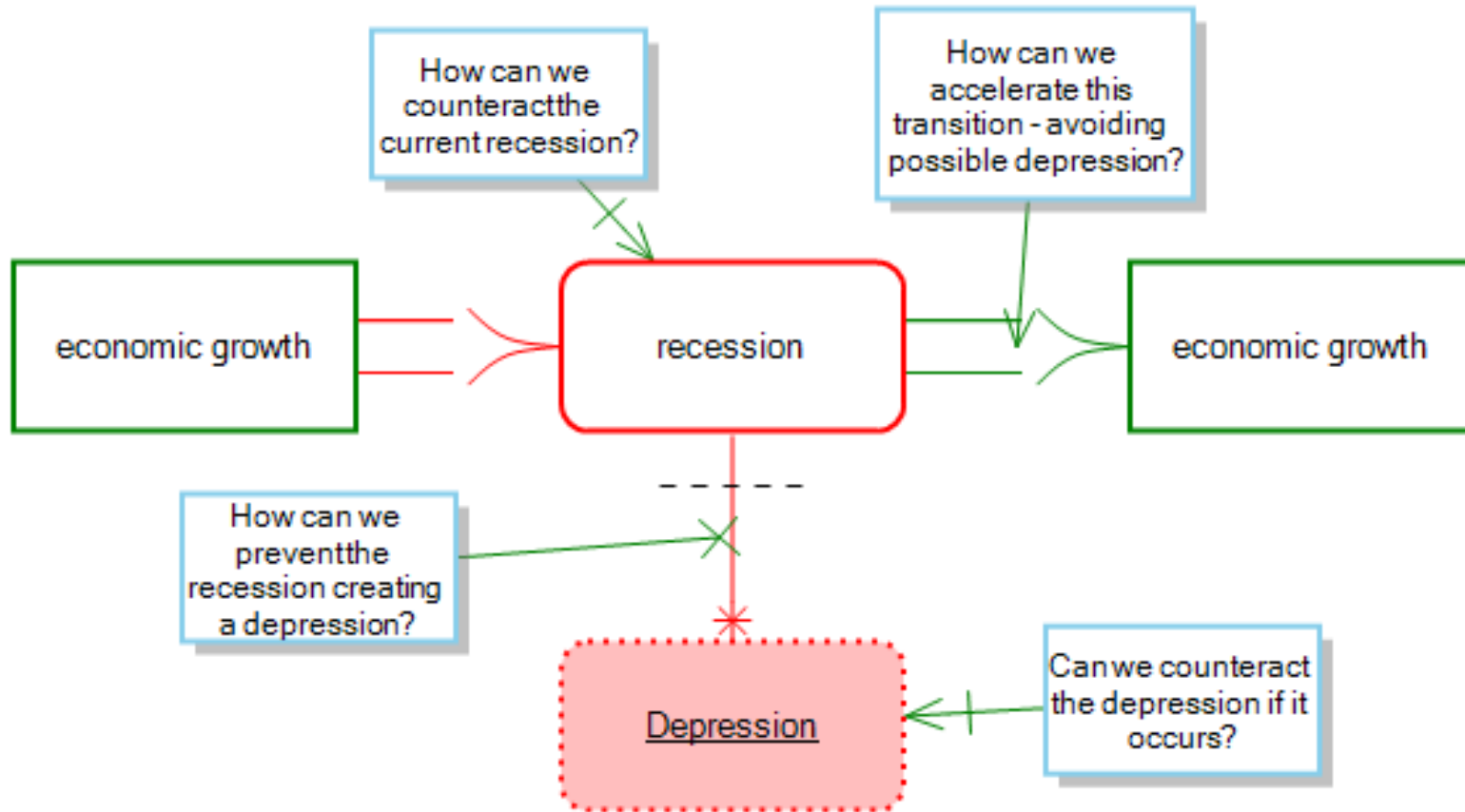
Asking questions drives innovation
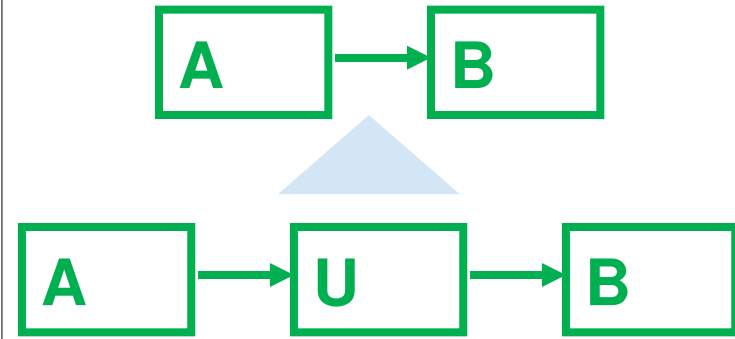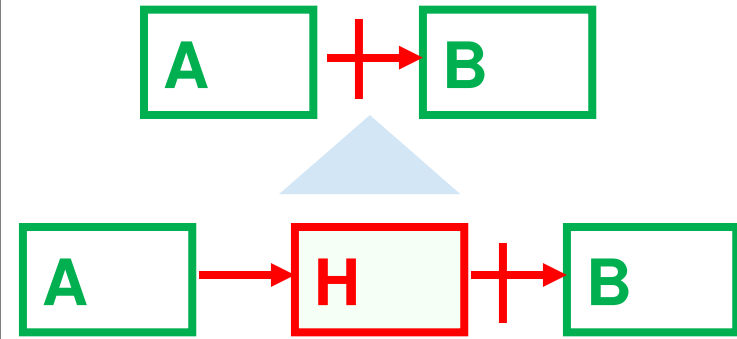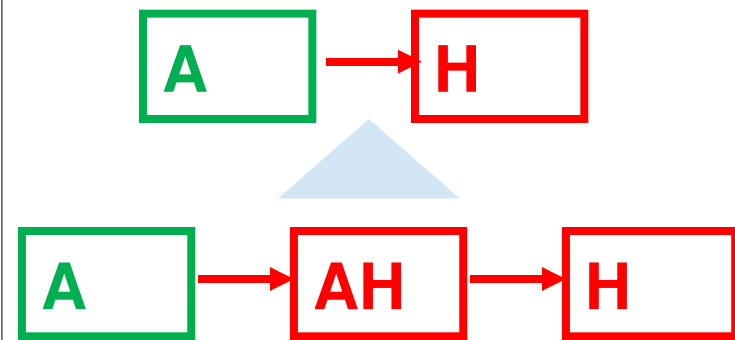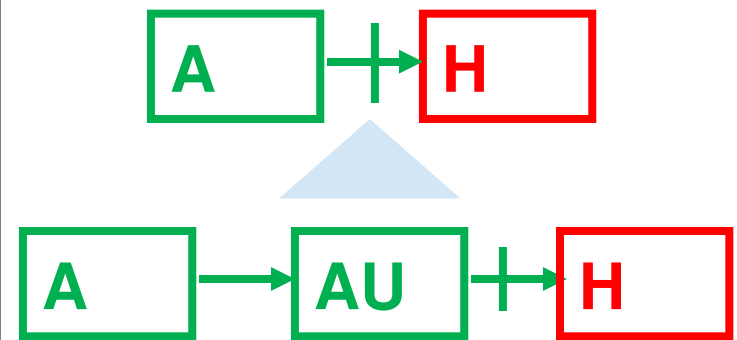
Case Study:
Oliver's 'garage'

Laser cannon

Infrared detector

Commandoes

3 generations

Helicopters

Garage version #1

Shrink button

In the beginning, Oliver ignored **harmful** functions

Only by modelling **causes and effects** among **useful and harmful functions** can innovation proceed

Garage version #3

Analysing the water crisis in Australia's Marray-Darling Basin
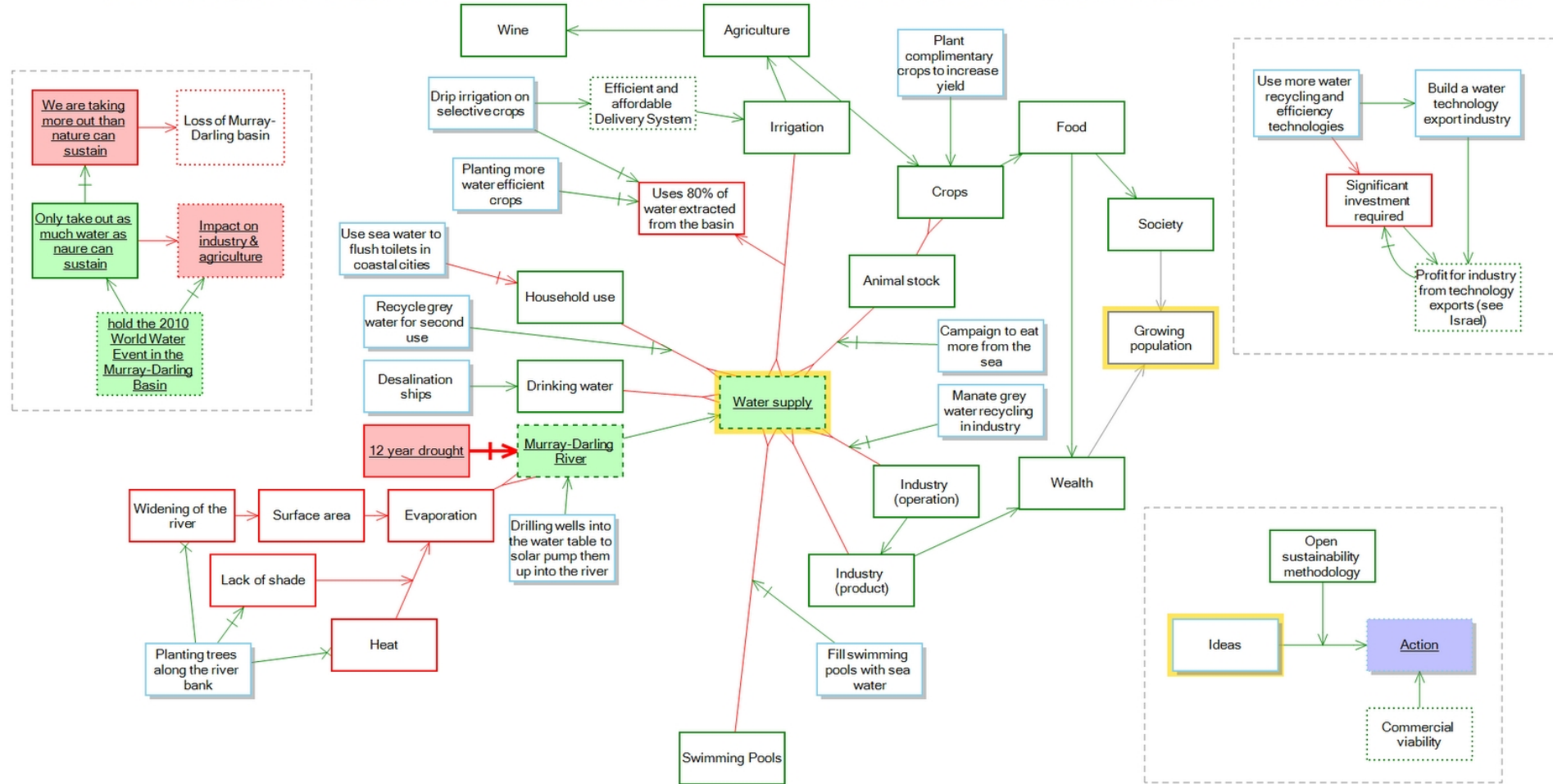
Courtesy of Mark Burnett, BearingPoint

Idioms – small 'eloquent' models
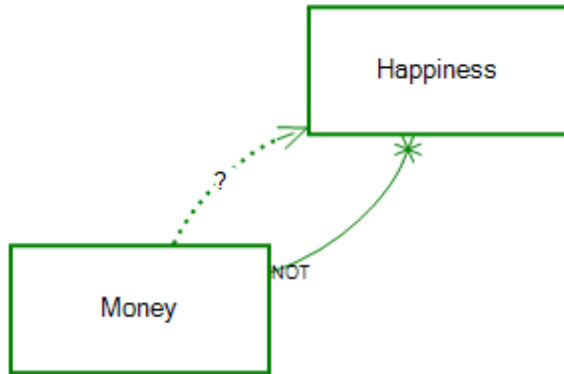
Money does not create happiness?
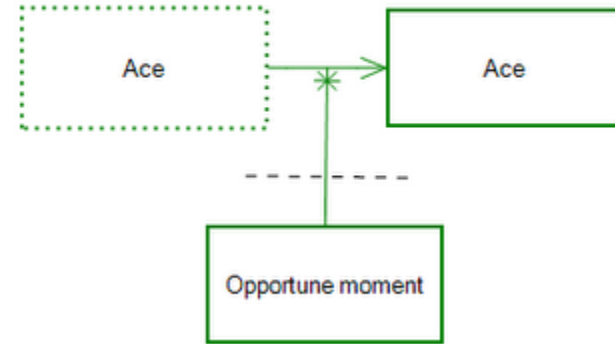
An ace up one's sleeve
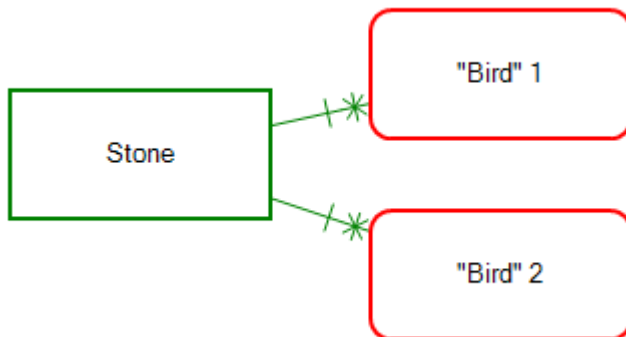
Killing two birds with one stone
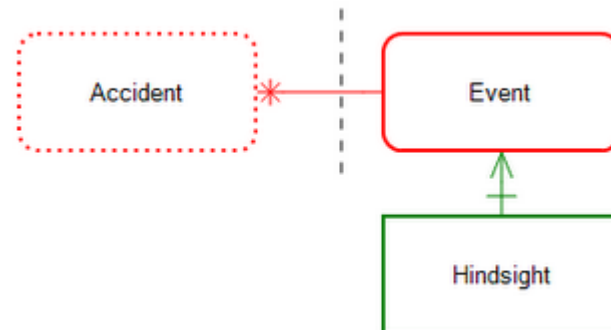
An accident waiting to happen

And my all time favourite
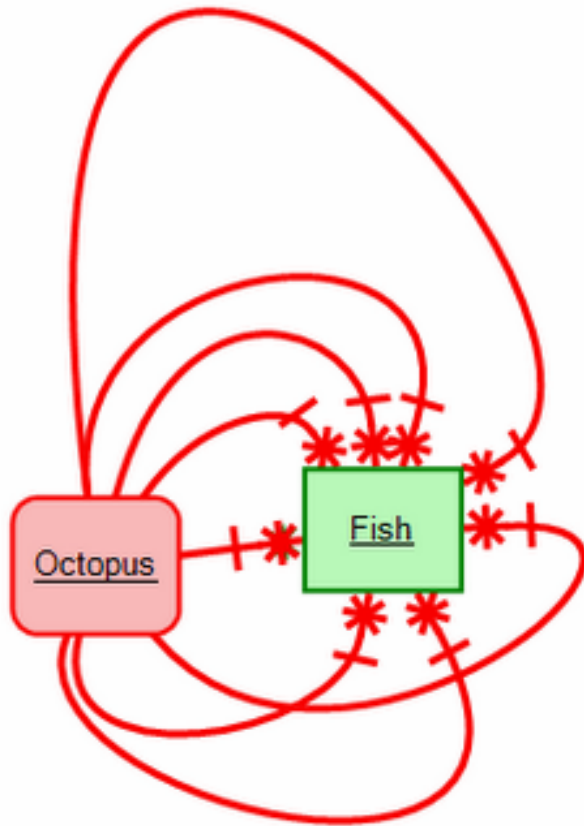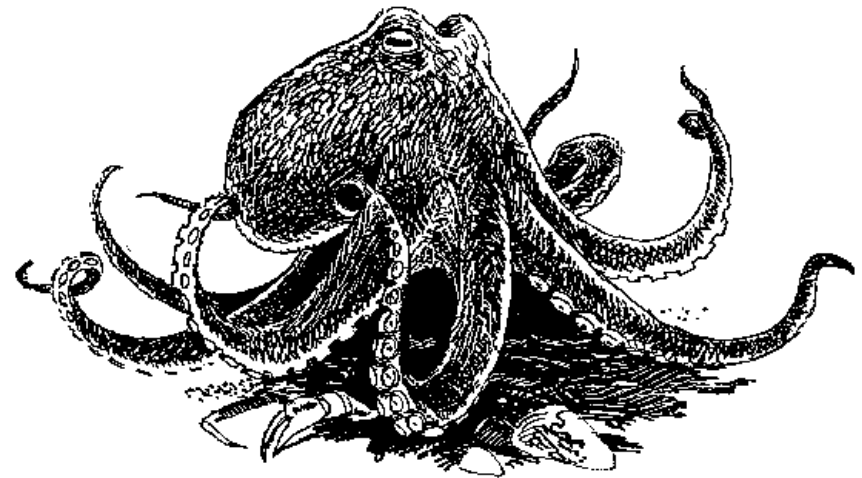
"The Evil Octopus is Killing The Nice Fish"

Courtesy of Anders Jangbrand, CSC

So what?
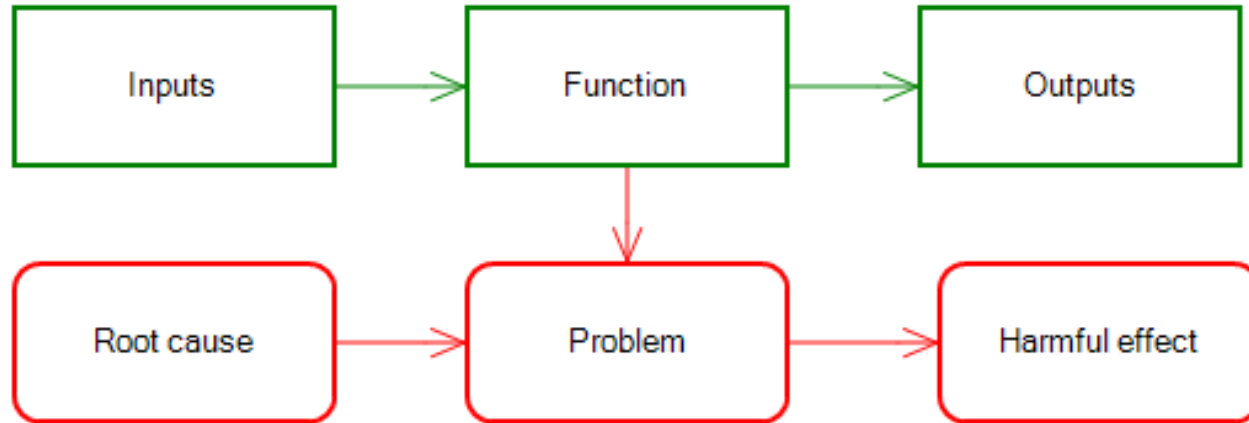
How often have you seen this 'pattern'?

Can you see the 'process' pattern in this model?

Impact of ships visiting Antarctica

Do you even recognize this model?
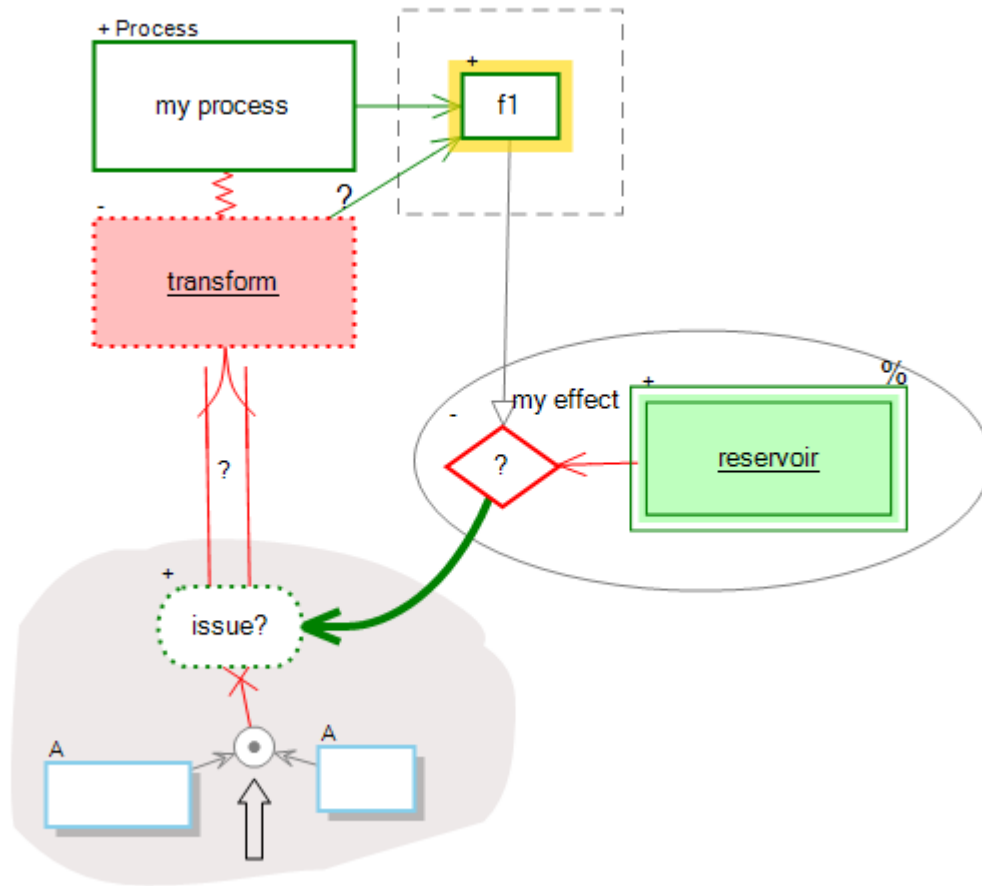
Southbeach is not systems dynamics – but there is a relationship
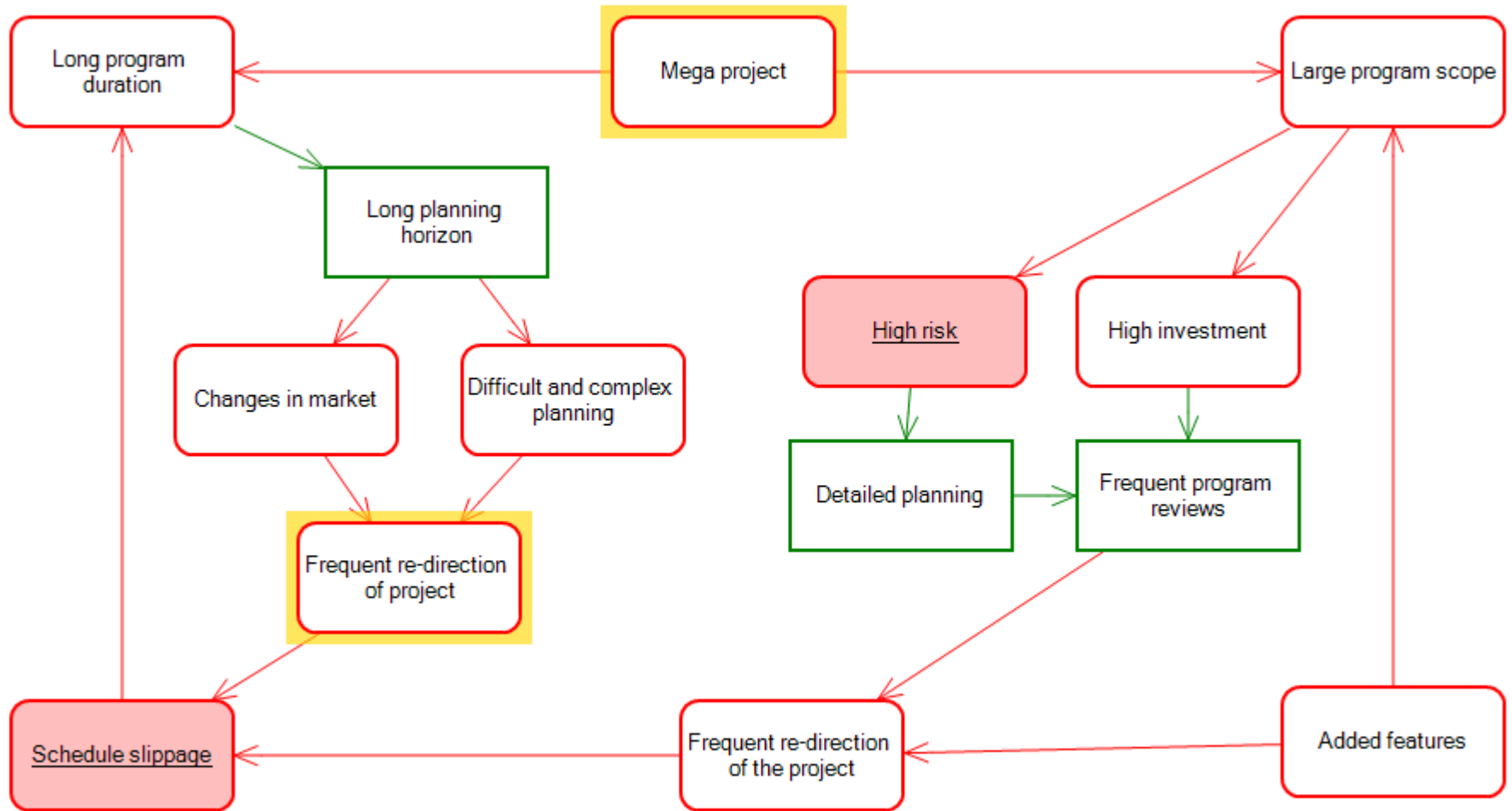
A moment in history
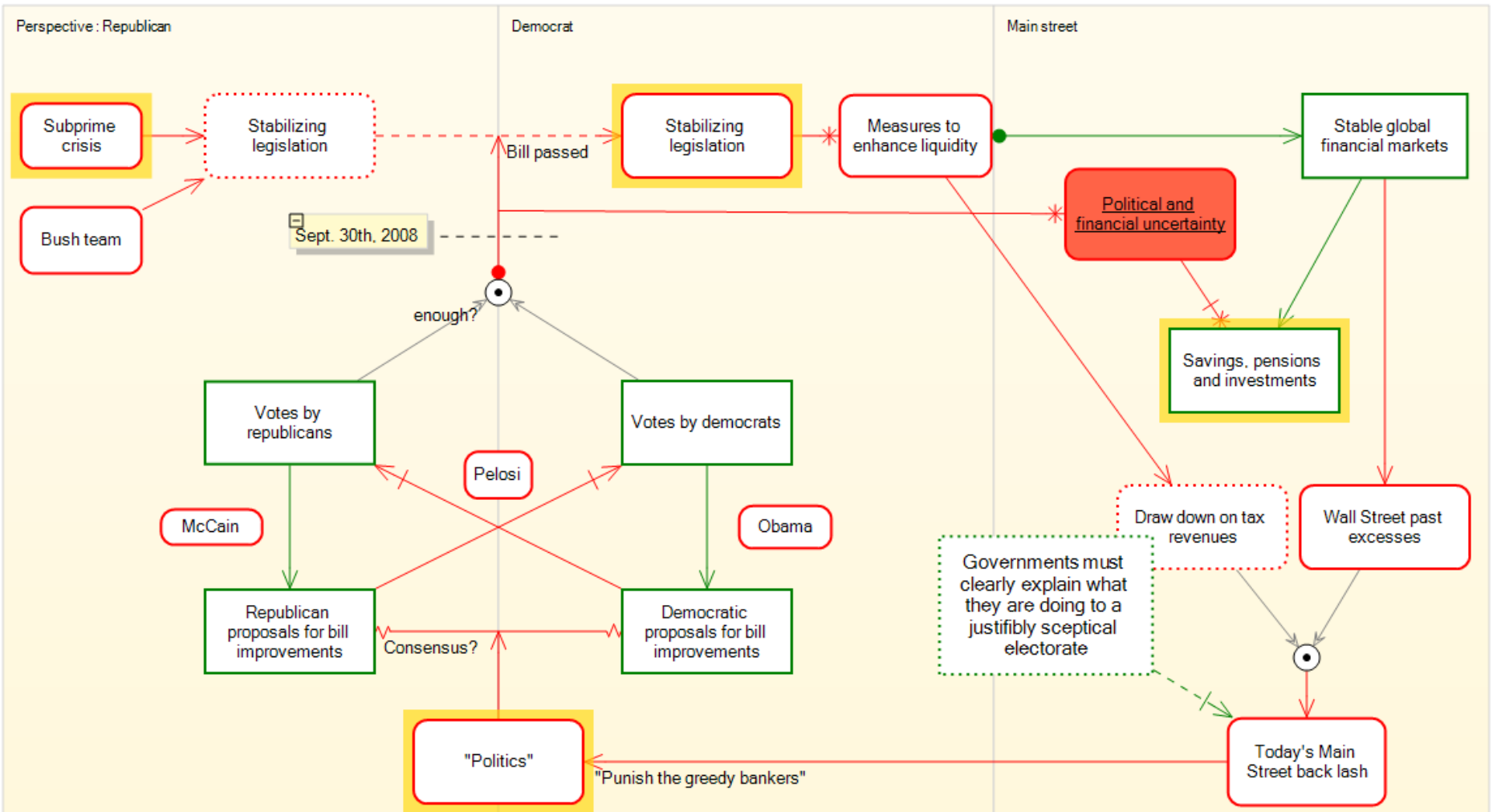
Clarifying the relationship to BPM

Run the process - <u>tasks</u>
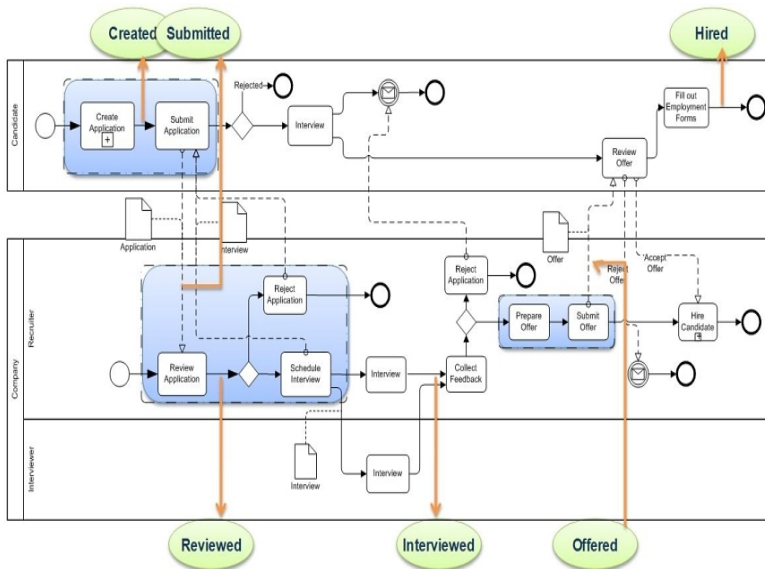
BPMN

Improve the process - <u>suggestions</u>
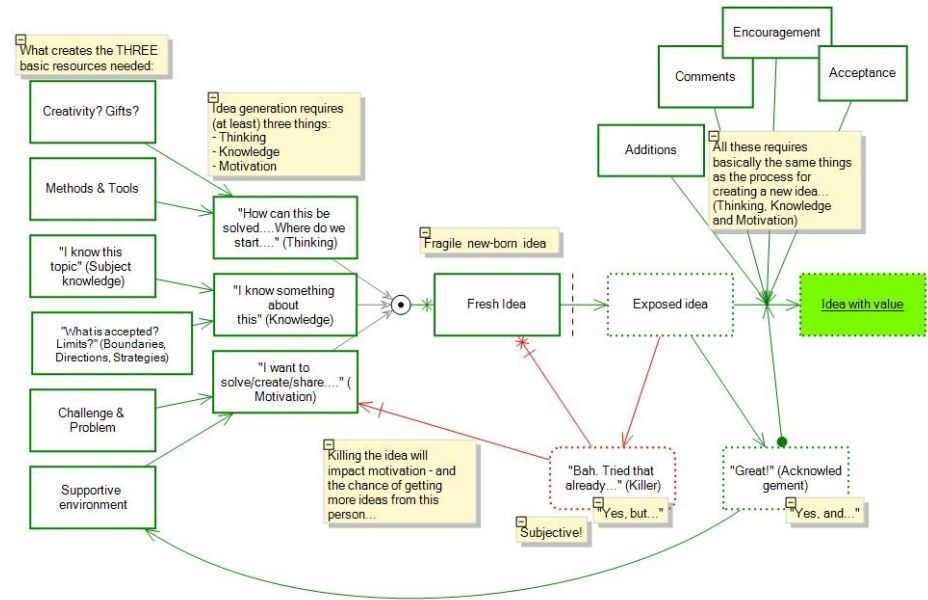
Southbeach

Southbeach today

- Popular among some TRIZ and BPM practitioners
- Early days
- Growing CSC community
- Promoted within CSC Catalyst
  - Initially: Modelling and sharing of best practices
- Starting to attract attention of Six Sigma community
- Unique position in market
  - Semantics, usability
- Developing 'Suggestions' technology (engine)

Does not replace any other notation
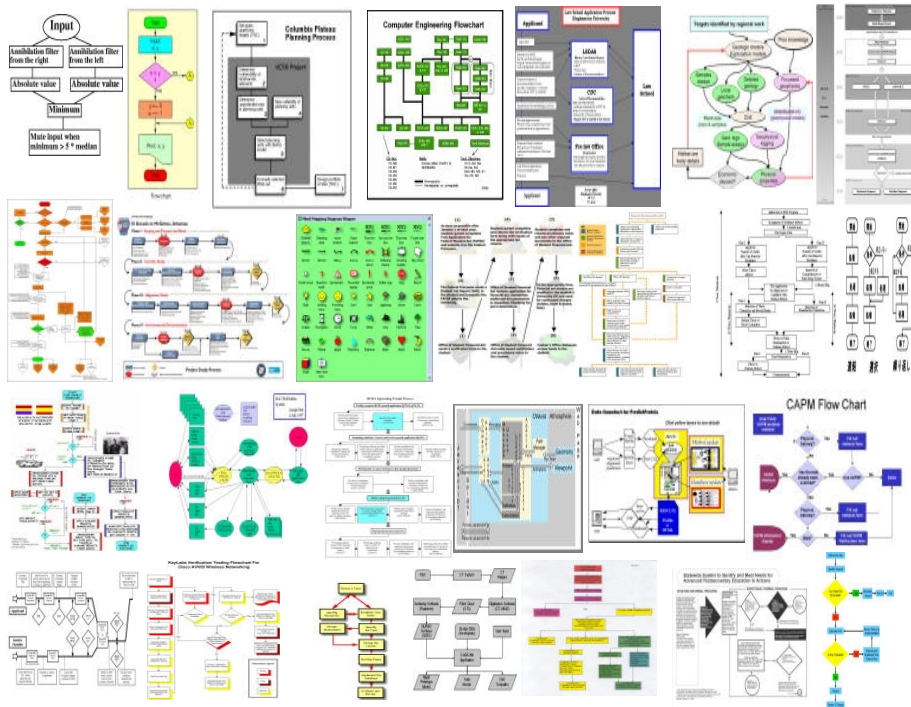
- Complements all other notations

- It's idioms draw from previous notations

- Can be used to 'mark up' other notations

- Stands in its own right as a useful 'new' notation

- Formal semantics but flexible in use – analogical

SouthbeachInc.com

- Develops notation (currently 0.9)

- Provides 'reference' implementation

- Usable and productive

  – By school children. By management consultants.

- Links process and practice

  – Domain experts with problem solvers

- Does not dictate methodology. Plug in your own!

  – Create small or large 'applications' for improvement, problem solving, change management, workshops, perspective alignment

Everything that exists, or is yet to exist, is attended by an inseparable companion …

The innovation shadow-self

Innovation Models

Current
Generation

Formulated Evolved Possibilities

Improvement

Next Generation
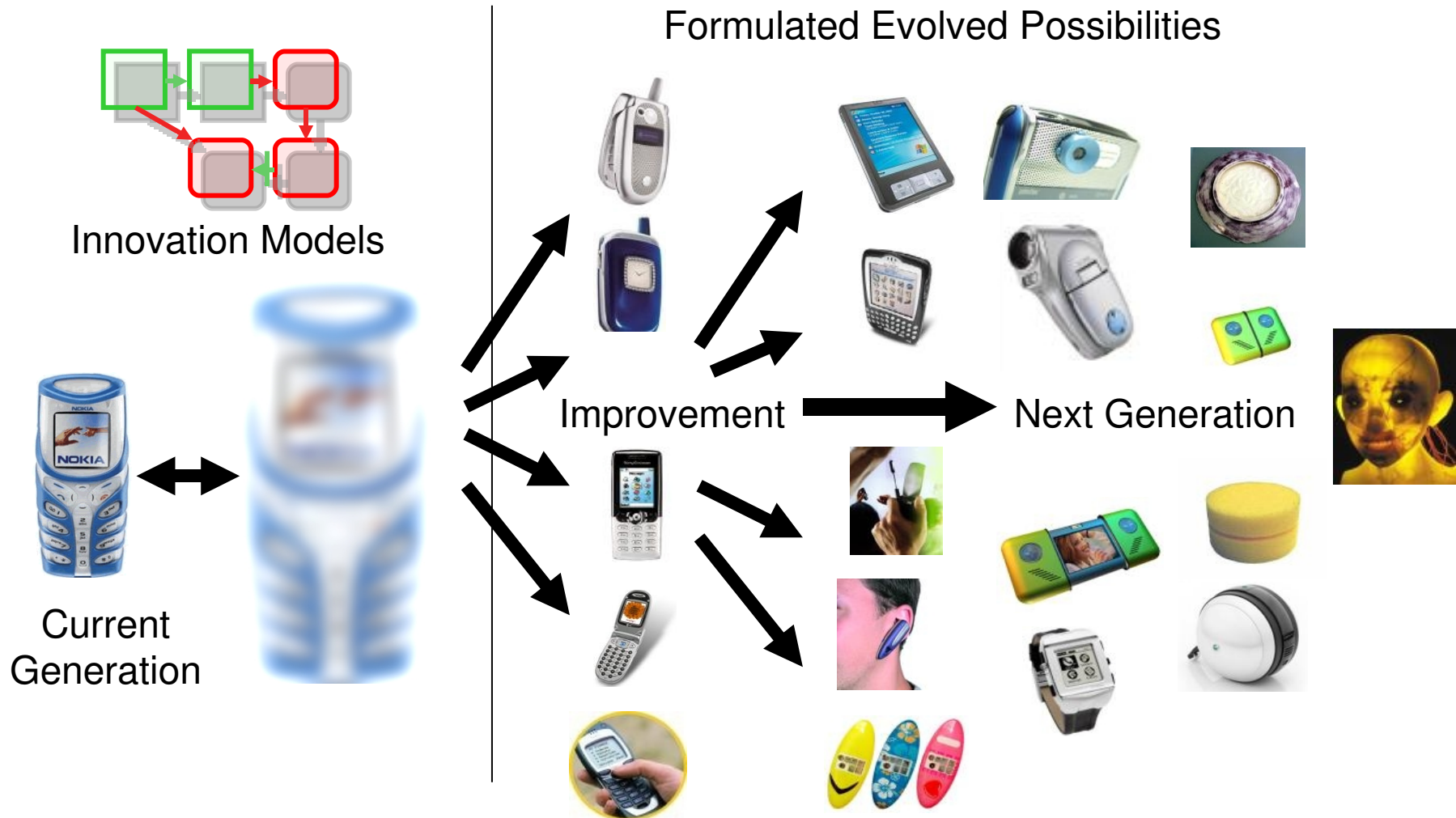
We must improve everything always
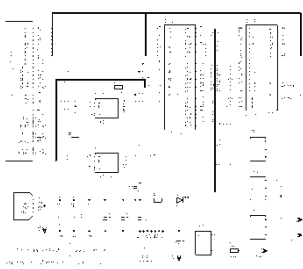
Engineering design
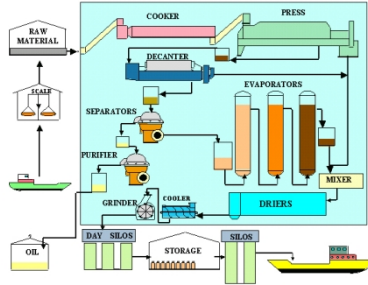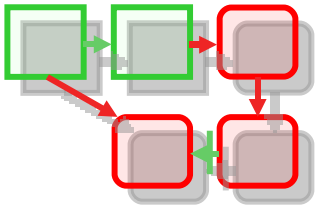
Process design
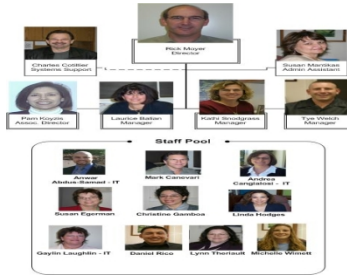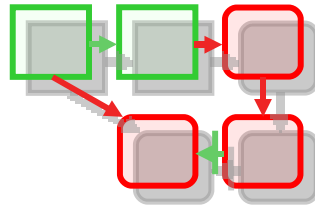
Organizational design
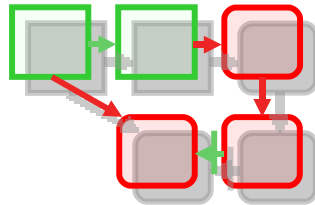
Production design
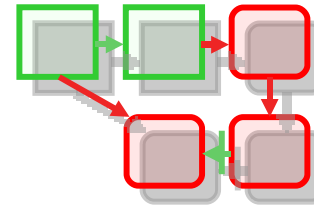
Operations design
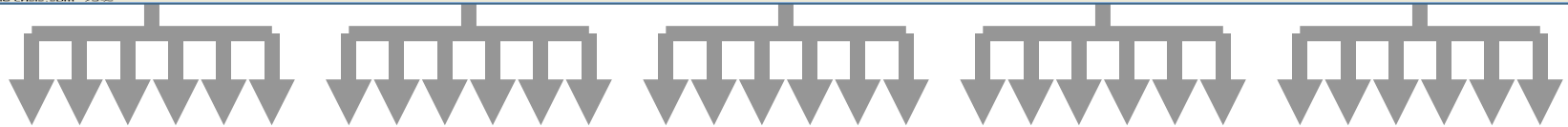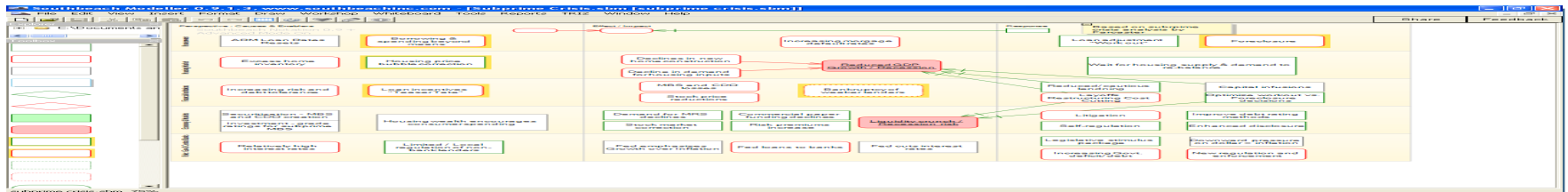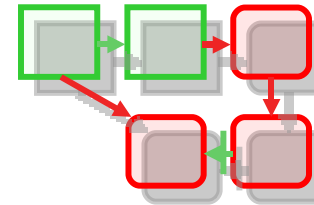
Improvement, renewal, replacement

So what's this "magic happens" stuff?

Impossible problems

Solution pathways

Problem pathways

Unlikely solutions
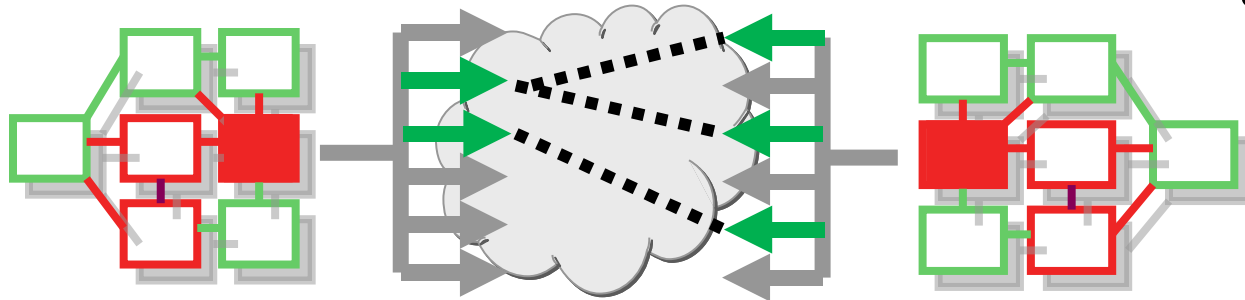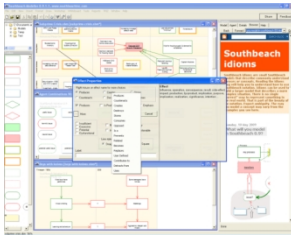
Problem mark-up
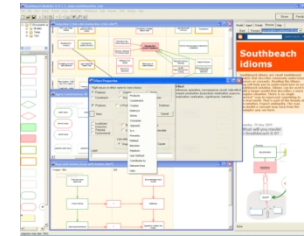
Solution mark-up

Combinatorial innovation

Conjecture: We need a shared visual language for 'innovation'
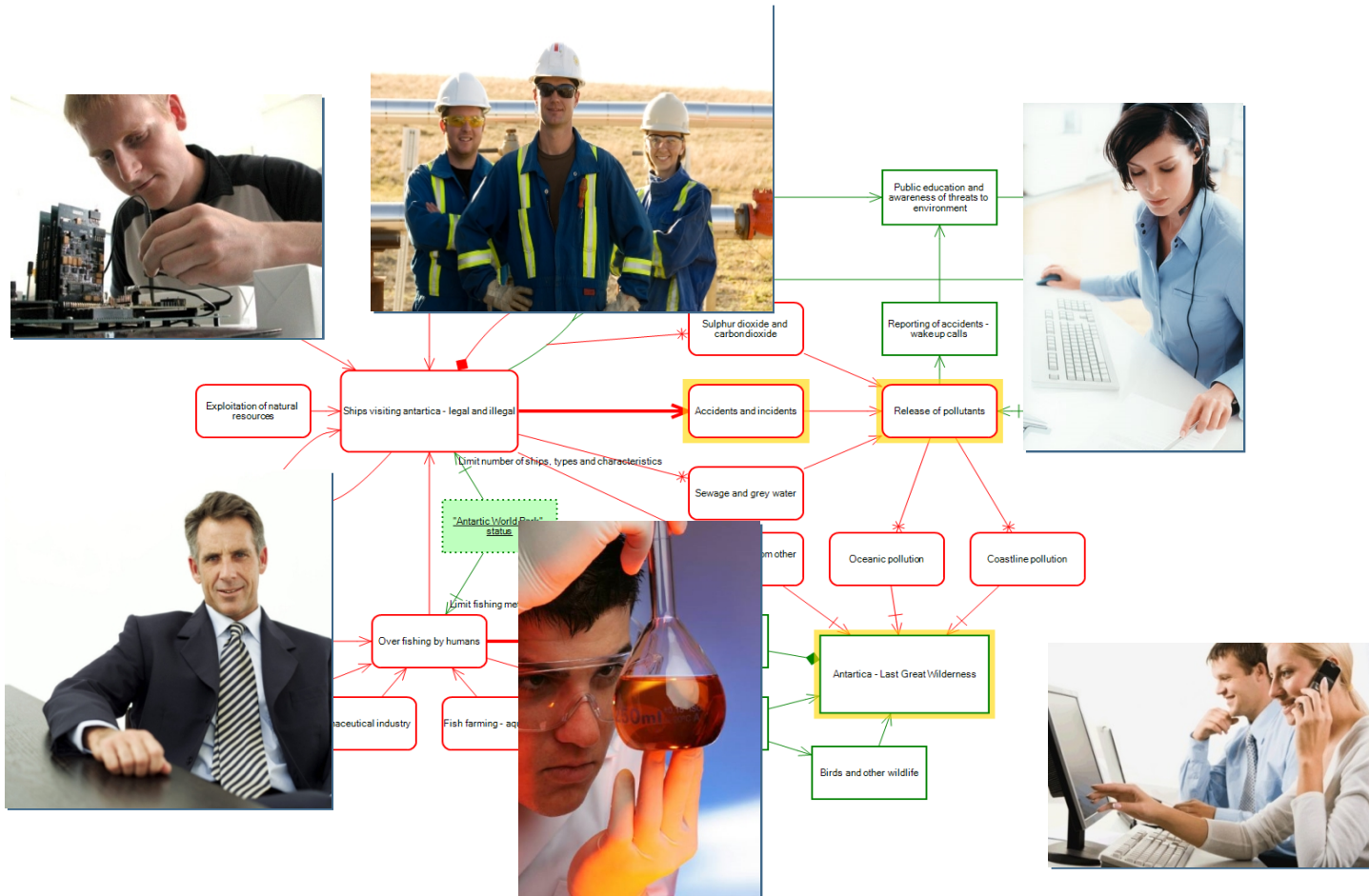
Communication, collaboration, perspectives, solutions
(Innovation Management)

Do you have problems?

Known Problems
You must solve and for which you have no known solution

Unknown Problems
Preventing progress that must be revealed, and subsequently solved

New concepts
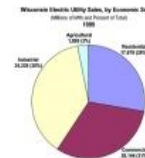
Business coming in

Mind

Market

Barriers, obstacles, contradictions, inertia

Research … Development … Operations … Marketing … Sales … Distribution

What do you need to get started?

A guide to SB notation

Caveat:
A fool with a tool is still a fool

Resources and contact details

http://southbeach-examples.blogspot.com

http://southbeach-idioms.blogspot.com

http://www.southbeachinc.com/presentations.html

http://www.southbeachinc.com/quickguide.html

http://trizmethods.blogspot.com

http://howardsmith.editme.com

hsmith23@csc.com

www.csc.com

http://www.southbeachinc.com

AT CSC, WE EXPECT OUR CLIENTS TO EXPECT MORE

PURPOSEFUL

We're guided by an industrious attitude and a determination to deliver on our commitments.

CSC

INGENIOUS

We thrive on exploring new ideas and create surprisingly inventive, far-reaching solutions that go beyond expectations.

PASSIONATE

We are deeply committed to our clients, because we believe that collaboration yields inspiring solutions.

Extras

Vision for Innovation

Management Tools

Ten years on, a new process agenda at CSC

1993
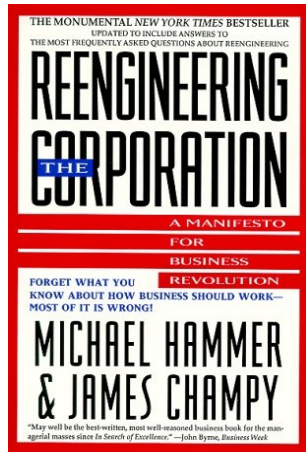
BPM Definition

2003
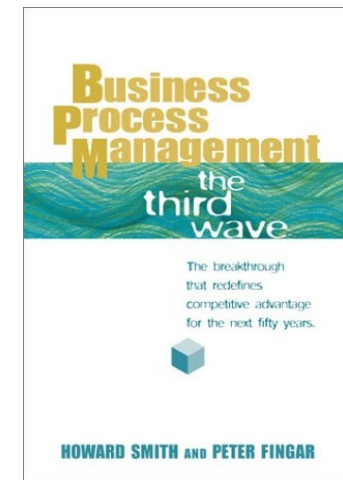
Lateral thinking and systematic methods are complementary

Example technique:
Five Whys

| Cause | → | Effect |

Why? [?]

Why? [?]

Why? [?]

| Symptom | ← | ← | ← | **?** |

Useful / harmful - - - - ▶ Why?

Innovation tools
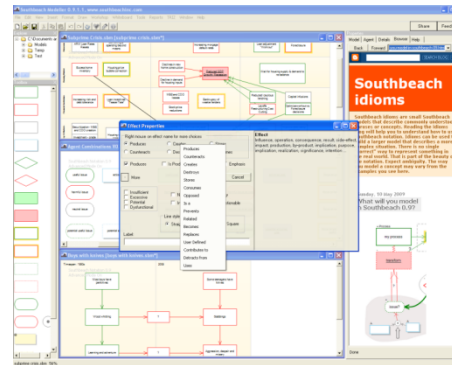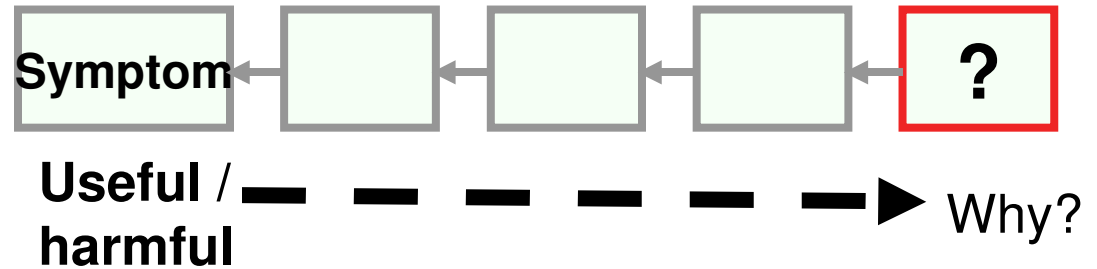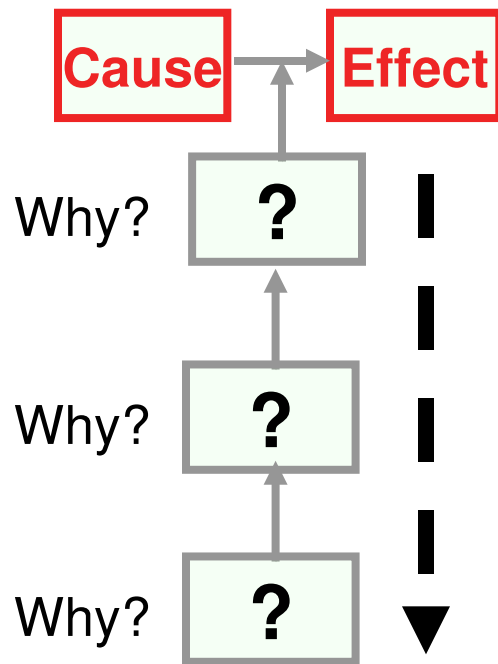
Questions
Suggestions
Directions
Solutions
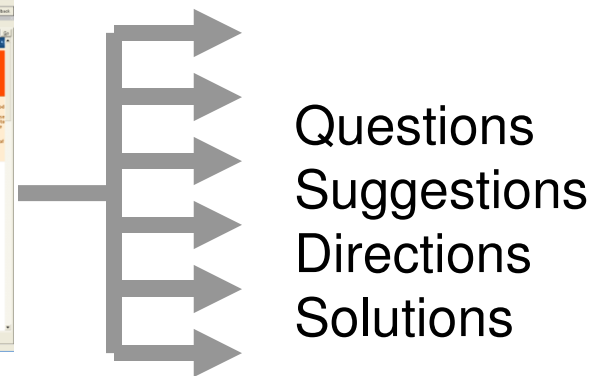
The high level innovation process looks like this

Stuff

Innovation models

Innovation direction

"Magic happens"

Innovation pathways

Generations

Improved Stuff

The innovator is a problem solver

Resources few
Projects many

Projects few
Resources many

Mind

Innovation Process

Market

Problem   **Solution**

Improved Stuff   **Delivered Stuff**
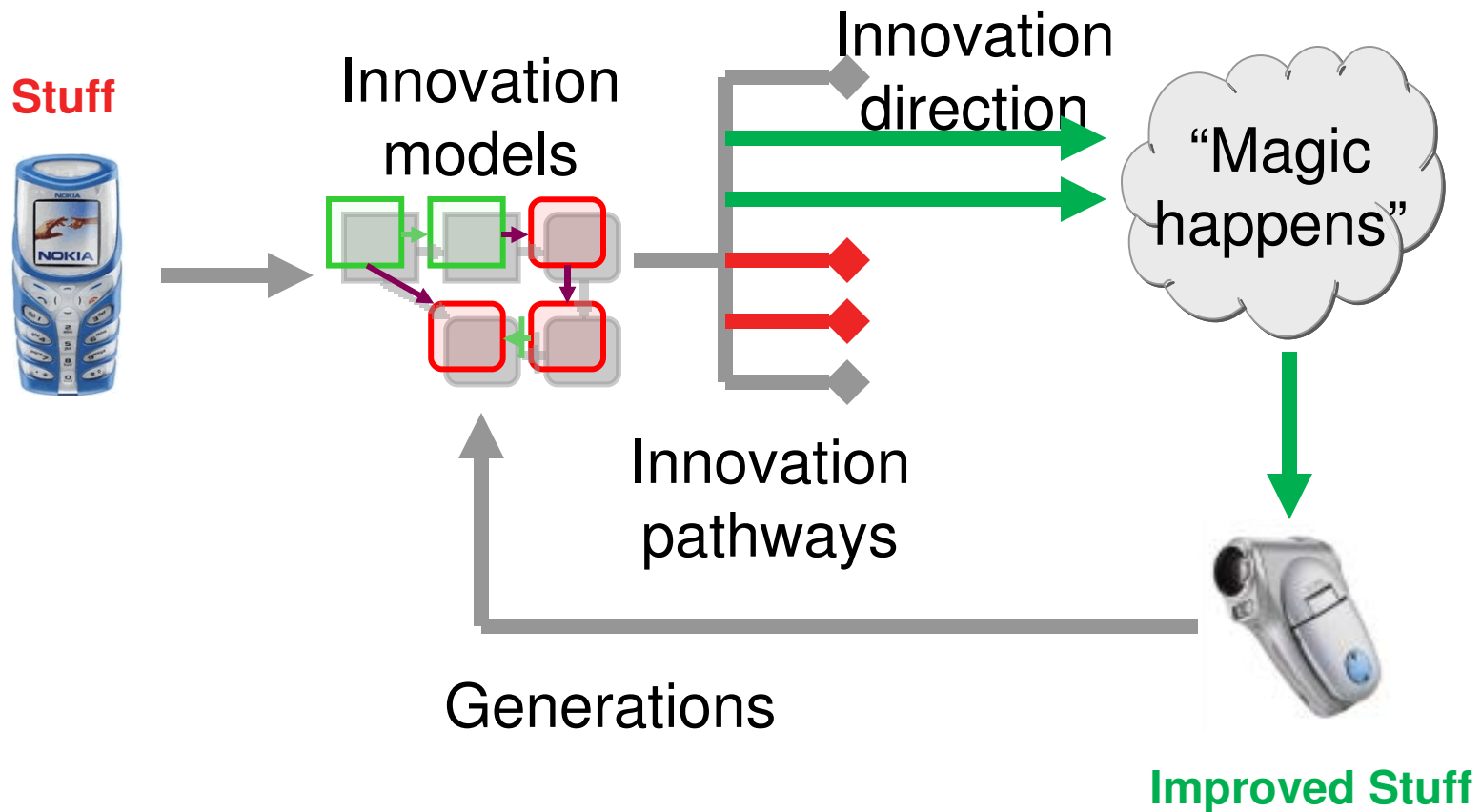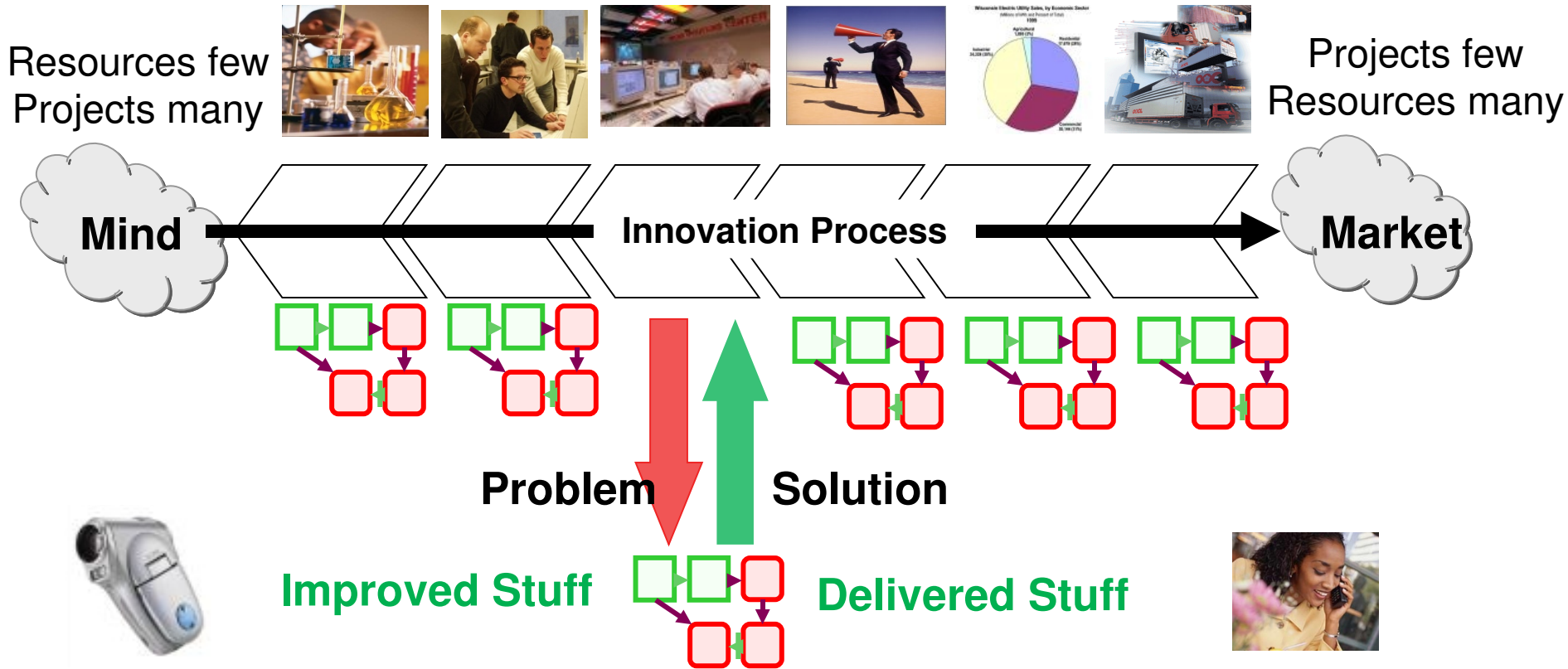
Technical feasibility … Market feasibility …Manufacturing feasibility … Delivery feasibility

The expanded innovation process

Current product & service portfolio

Aspects & perspectives

Potential Stuff

Stuff

Shadow selves

Directed evolution

Inventive problem solving

Improvements Replacements

Delivered Things

Innovation models

Value chain
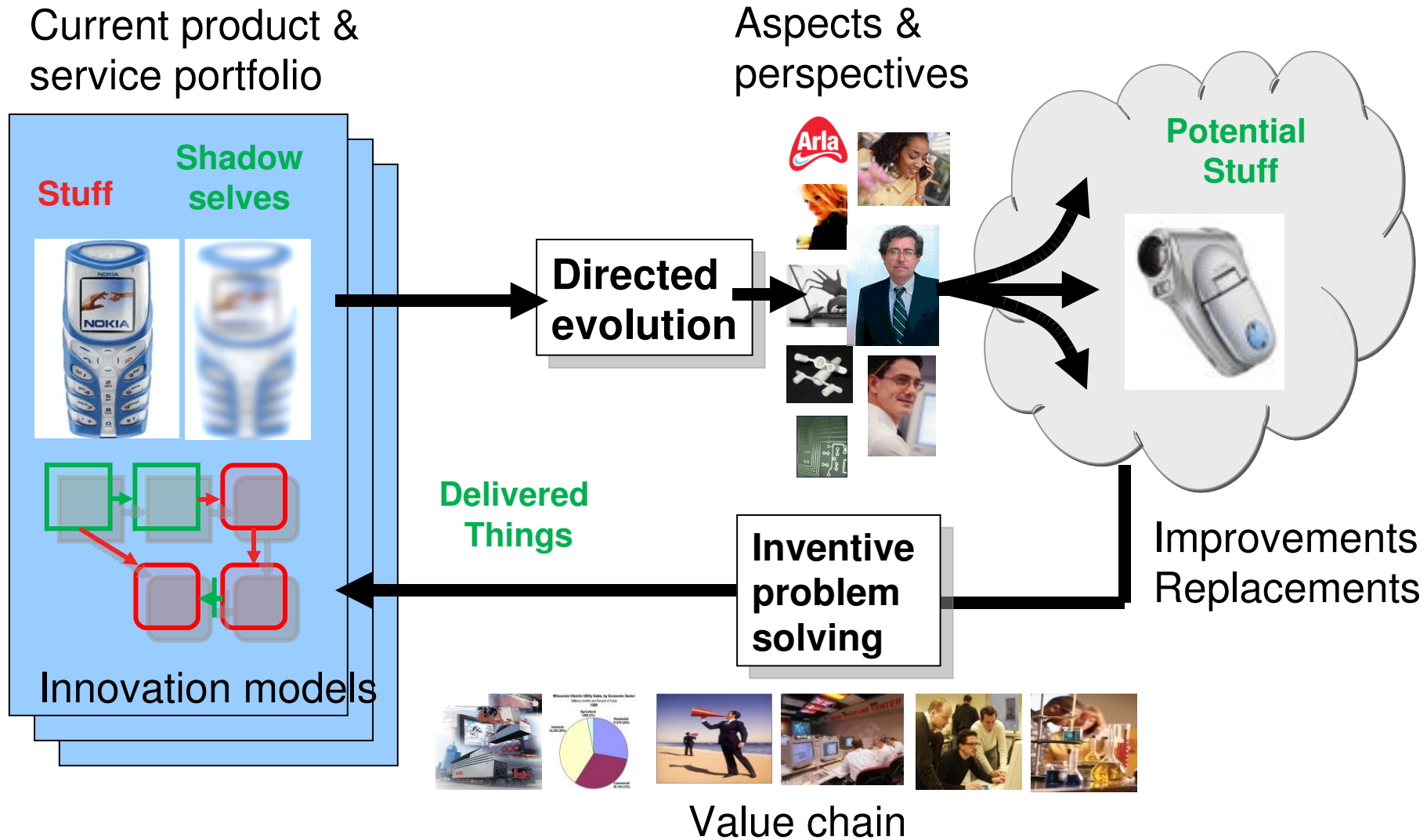
Because we are talent limited, it's all hands to the pump: Role of Ideation/Collective Intelligence

Directed evolution

Problem solving

Stuff

Potential Stuff

Delivered Stuff

Impossible problems

Hard challenges

Employee creativity

Employee knowledge

Raw ideas

Idea Development

Validated ideas

Solution concepts

New ideas

Challenge – Capture – Develop - Exploit
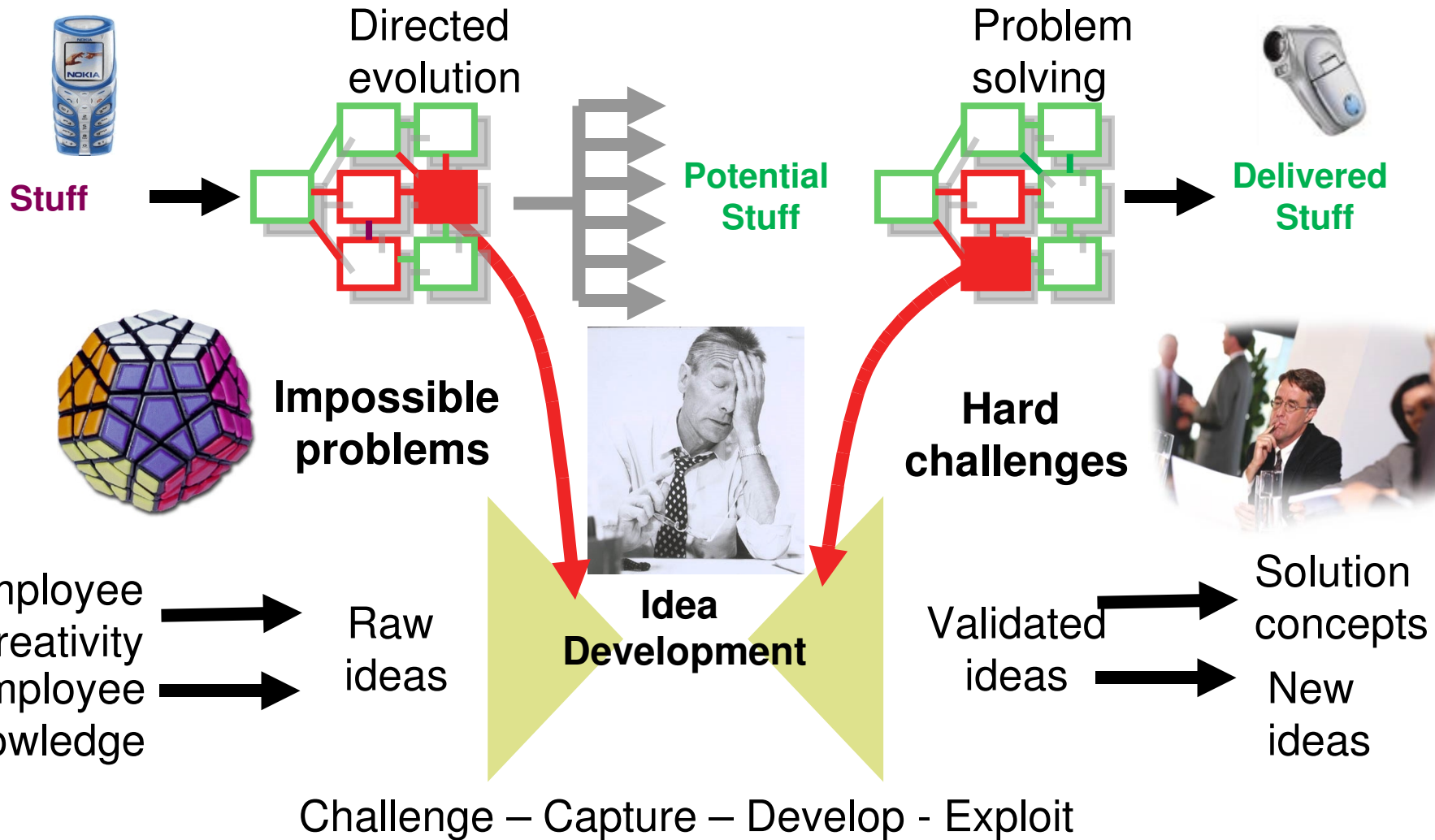
We can also innovate the portfolio
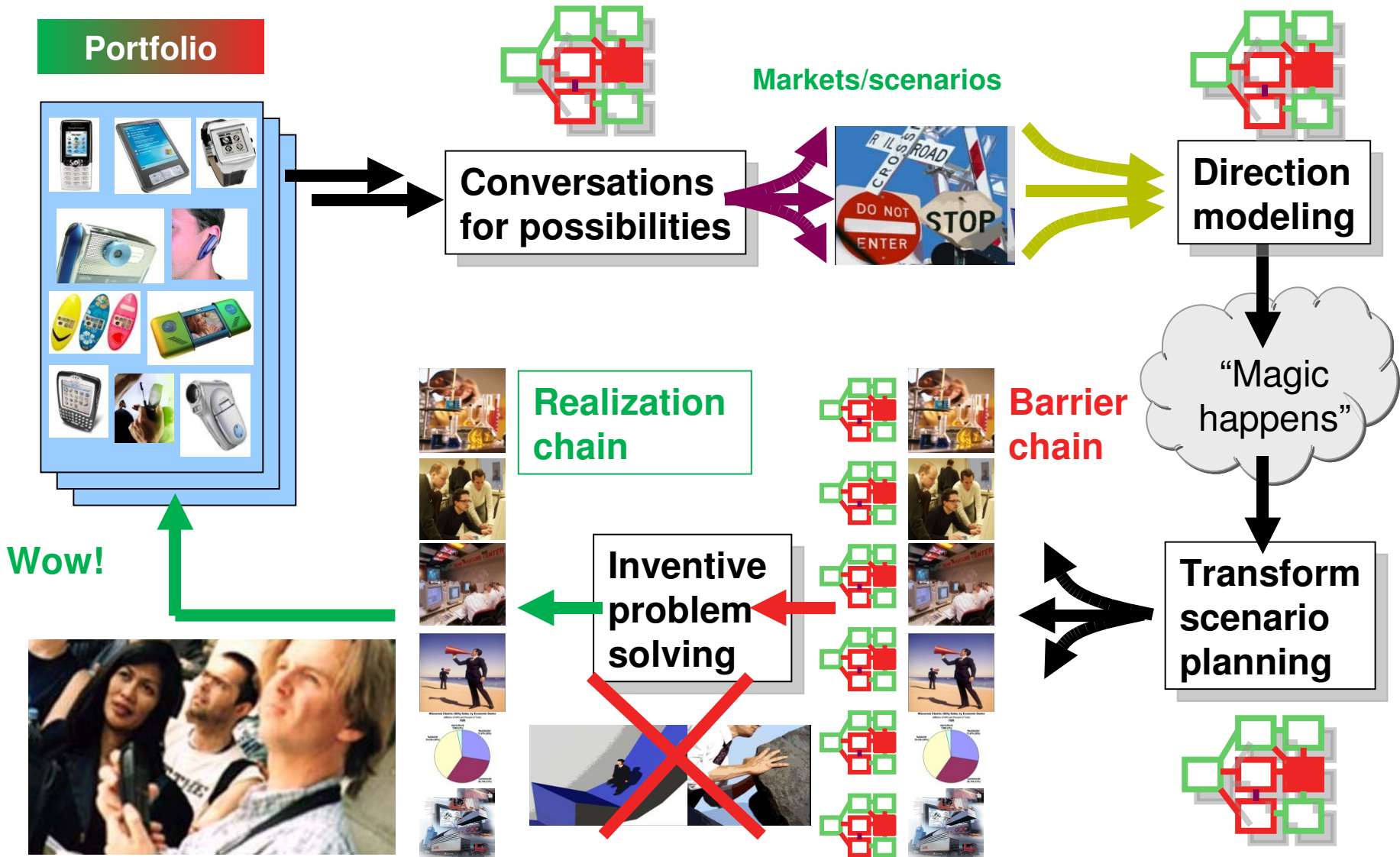
Portfolio

Conversations for possibilities

Markets/scenarios

Direction modeling

"Magic happens"

Realization chain

Barrier chain

Inventive problem solving

Transform scenario planning

Wow!

So what's this "magic happens" stuff?

Impossible problems

Solution pathways

Problem pathways

Unlikely solutions
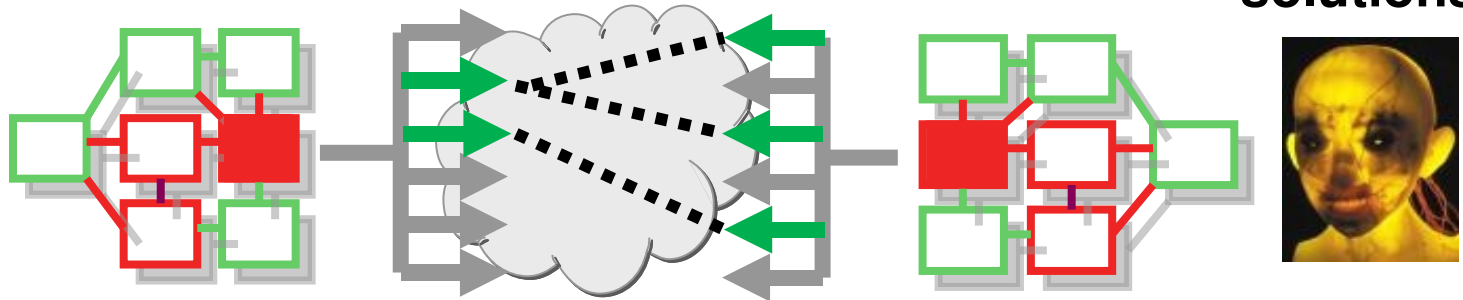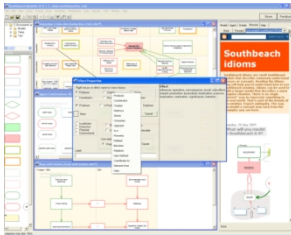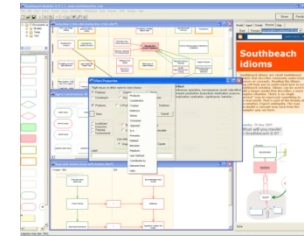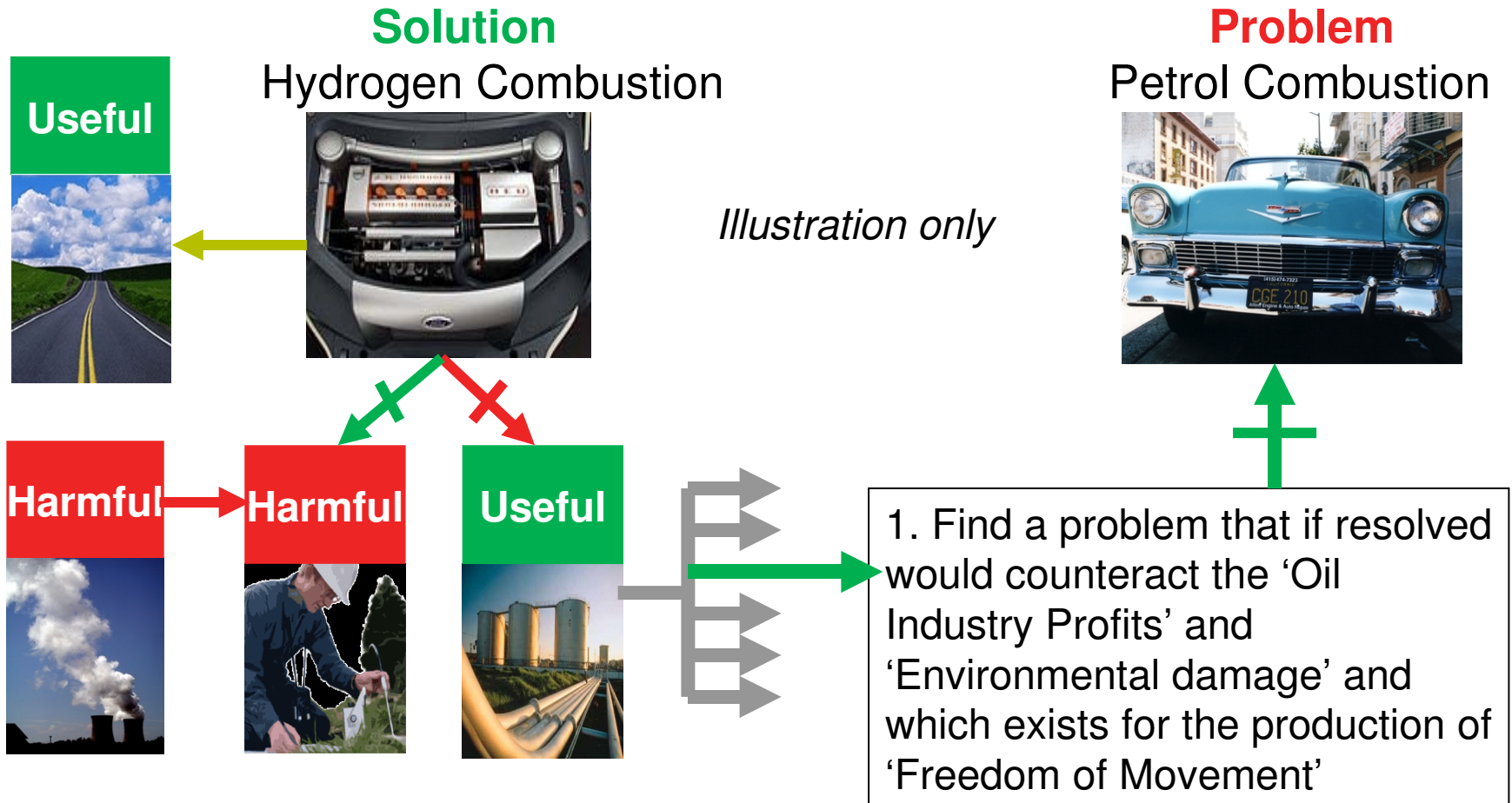
Problem mark-up

Solution mark-up

Combinatorial innovation

The same models can describe solutions leading to problem-finding pathways

Solution
Hydrogen Combustion

Problem
Petrol Combustion

Illustration only

Useful

Harmful → Harmful   Useful

1. Find a problem that if resolved would counteract the 'Oil Industry Profits' and 'Environmental damage' and which exists for the production of 'Freedom of Movement'

The next generation of knowledge management for innovation

Problem-finding pathways

Solution-finding pathways

Solution model

Problem model

Solution