

Renewal & Restarting

#### Renewal

- Invest in sources of fresh positive energy.
- · Continuity with the past.
- Ecological example: planting new trees.
- Urban example: making rundown areas more attractive.
- Business focus: new market entrants, innovation.

#### Restart

- "Greenfield" design
- Forgetting the past.
  - Cancel the debt.
- GoBack
  - Back to zero.
  - Back to the drawing board.
  - Back to the negotiating table.
  - Back to basics.

Repeat, Recollect & Reframe

#### Repeat

 Persistence. If at first you don't succeed: try, try again.

#### Recollect

• Repeat but with renewed understanding.

#### Reframe

- Context: take an undesired attribute and find a different situation where it would be valuable.
- Meaning: take an undesired attribute, and find a description where the attribute takes on a positive value.

Repair & Rearrange

#### Repair

- Healing, Creating Wholeness
  - Christopher Alexander
- Integration
  - Melanie Klein

#### Rearrange

- Redesign, Reengineering, Restructuring, Reconfiguration, Refactoring, Repunctuating
- Sometimes: moving the deckchairs on the Titanic?

Relaxing & Remaining Silent

#### Relax

 Wu Wei No Monkeying Around

#### **Remain Silent**

- Renunciation of speech
  - Labels trigger preconceptions
  - Feedback makes things worse
  - Language spins nightmares

Refining & Reducing

#### Refining

- Restore purity by eliminating bad or non-essential elements:
  - waste
  - rogue
- Downsizing as corporate anorexia

#### Reducing

- Restore balance by reducing excess elements:
  - cost
  - risk

#### Paradoxical Intervention Reversing, Redirecting,

Reductio

#### Redirecting

- Convert from negative to positive. Tame natural forces. Bring uncontrolled elements under control.
  - Fire becomes tool
  - Mould becomes penicillin
  - Parasite becomes slave
- Find new uses for waste products.
  - Availability of petrol leads to development of motor car engine.

#### Reductio

- · Contradiction as force for change
- Double Bind against Double Bind

#### Reversing

- Eliminate something by seizing it.
   Obtain something by giving it away.
  - Bateson: broadcast fake Japanese propaganda
  - Tom Peters: out of control
- Often works by interfering with closed feedback loops and polarity responses.
  - Prescribing / exaggerating the symptom
  - Steer into the skid.

Removing Replacing & Retreating

#### Removing

- Disconnect problem from problem owner.
- Elimination: remove problem from owner
- Escape: remove owner from problem

#### Replacing

- Putting something else in place of the problem
- Putting the problem in another place.

#### Retreat

- Temporary withdrawal
  - intending a return with renewed strength

Redemption placing trust in higher power

#### Institutional

 This body will contain and solve all our problems.

#### Technological

- This device will eliminate all our problems.
- Deus ex machina

#### Diffusion Summary

- As a practitioner, I have a need for better ways of reasoning about matters of diffusion and value.
- Current diffusion theory seems inadequate to support my needs. I'm particularly concerned about various inadequacies that seem to be exposed by Component-Based Development (CBD).
- I see CBD not merely as a fashionable solution to some class of problem (what Bert Swanson in his talk referred to as an Organizing Vision) but also as an emergent phenomenon.
- CBD represents the progressive commoditization of software artefacts, and of the software process.
- Although there are powerful companies currently promoting this concept (including IBM, Microsoft and Sun), these companies are perhaps merely falling in line with the logic of capitalism - of irresistible economic forces towards commoditization.
- This presentation addresses the diffusion of individual software components. I state several empirical hypotheses which (to my knowledge) have not yet been seriously studied, and I challenge theoreticians to provide a better theoretical framework.

# Explaining Components

#### **FORN**

- loosely-coupled business and system architectures
- separate components providing business services to one another via simple interfaces

#### **PROCESS**

- separate / parallel responsibility for whole and parts
  - · development
  - · management
- · whole procures parts
- properties of parts contribute somehow to properties of whole.

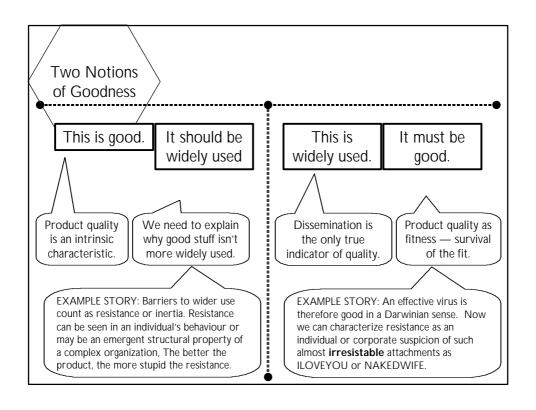
#### **PURPOSE**

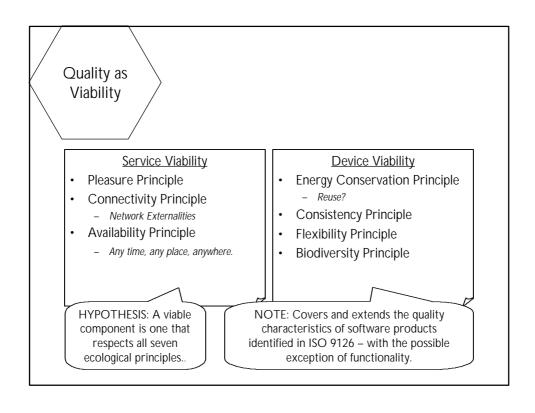
- accommodate rapid change
- economies of scale through reuse.

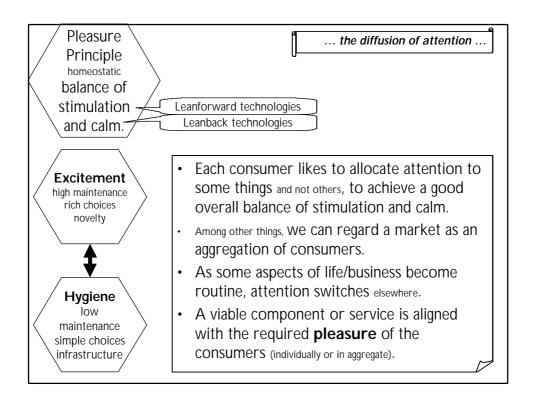
#### MATERIAL

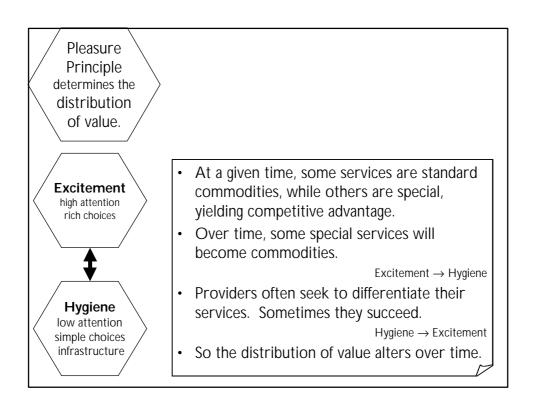
- · component as if real object
- · coherent package
  - software
  - · business operations
  - knowledge / capability
- component possesses character

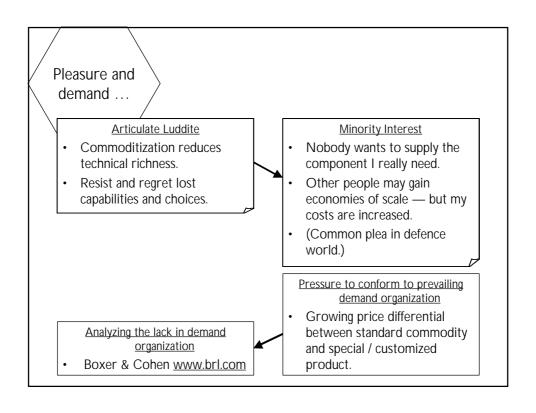
... but is this what counts as a "good" component?

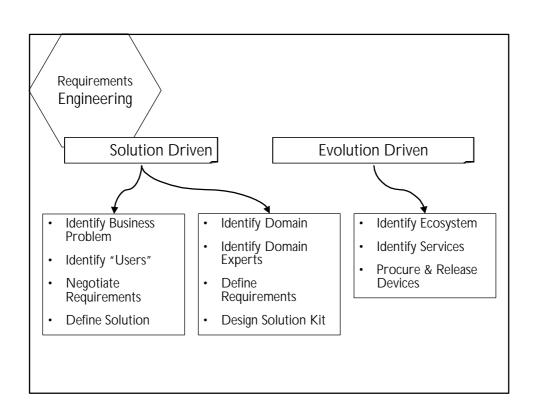












#### Diffusion ∈ Many Adoptions

#### **Units of Adoption**

- Agent
  - Granularity of the adopting agent
- Adopts
  - Granularity of the decision to adopt
- Device
  - Granularity of the adopted device
    - subcomponents
    - substitution

#### **Adoption Issues**

- The Art of Judgment
  - Vanilla adoption
  - Joint/shared decision
  - Contingent decision
  - Appreciative context (Vickers)
- Delegating Responsibility
  - Forced/automatic adoption
  - Concealed/invisible adoption
- Transformation
  - Assimilation and accommodation
  - Socially constructed technology (Latour)

Diffusion-Based Theory of Value Practical Uses

- Guidance for Designers
  - Put design effort into high-value areas.
  - Design principles Do large baroque components have longterm survival value?
- Guidance for Entrepreneurs
  - Associate/align oneself with successful components.
  - Negotiate prices that reflect value.

#### Guidance for Purchasers

- Look beyond the current product features and vendor promises.
- Understand the long-term evolutionary prospects of a component, before making strategic commitment.
- Guidance for Regulators
  - How to promote system-wide characteristics such as trust and diversity?

#### Does Evolution Increase Value?

And what, if anything, is lost?

for WHOM?
WHERE?

#### Path of Complexity

- Product increases functionality

   becomes baroque.
- Each evolution step (mutation) weakens the component and brings its death closer.
- Product increases market share — becomes standard commodity.

Path of Power

 Each evolution step (mutation) strengthens the component and increases wholeness.

#### Path of Extinction

- Lower-value products disappear. Higher-value products survive.
- The average value increases as evolution unfolds.

#### Path of "Progress"

- Products are inevitably replaced by better products.
- But quality and value are eroded by competition.

# ... and component-based business ...

- A virtual business can be "plugged together" from separate components.
- There are two levels of business strategy
  - Level 1 involves identifying viable components.
  - Level 2 involves controlling the design of the value chains influencing the distribution of value and survival across an uneven network
- The value generated by the whole business is divided between the components
- The value generated by the whole business is a function of the diffusion of its products and services.
- The survival of a component is a function of the survival of the (many) whole businesses in which it participates.

... so what is the theoretical basis of the relationship between business value and market diffusion?

#### Methodology

- Avoid taking sides (moral stance) on abstract notions, such as diffusion and resistance.
  - Many instances of diffusion have been obnoxious.
    - The language of diffusion is often arrogant and implies elitism and colonialism (McMaster).
  - By all means take an ethical position for a given product in a given context
    - · Sometimes you may wish to be on the side of diffusion,
    - Sometimes you may wish to be on the side of resistance.
- Look for ways of tying value and vitality.

#### References

- Albert Borgmann, Technology and the Character of Contemporary Life (Chicago 1984)
- Philip Boxer & Bernie Cohen, "Analysing the Lack of Demand Organization". http://www.brl.com
- Richard Veryard, The Component-Based Business (Springer, 2001). See also http://www.veryard.com and http://www.cbdiforum.com
- · Geoffrey Vickers, The Art of Judgment
- IFIP WG 8.6 Proceedings Pittsburgh, Oslo, Ambleside, Helsinki, Banff.

Case Study Component-Based Change

#### Situation

- Established organization with single business.
- Possible termination of current business at known date.
  - Loss of licence / contract
  - Expiry of patent / licence
  - Regulatory change
- Excellent organization could be reused for alternative business.

#### Challenges

- Operate business until termination date
- Retain all required components until termination date
- Find viable alternative business for organization
- Find viable alternative use for each component
  - business continuity
  - managing the assets
  - protecting the people

# Component View

- Business is built from several components.
  - Call centre
  - Retail sales force
  - Technical network / infrastructure
  - Systems
  - Brand
  - \_ ...
- Each component provides one or more services to the business as a whole.
- Each component may play a different role in the organization's future – or none.
- Each component may undergo a transition into the future organization.
- Each transition may take place on a different schedule.

# Component Options

#### Retention

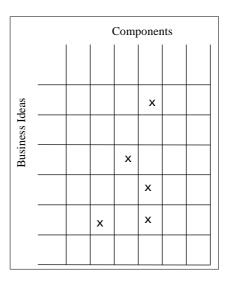
- Find alternative uses for component
- Build alternative business proposition in detail
- Transition component to new use
- Maintain service to old business until termination.

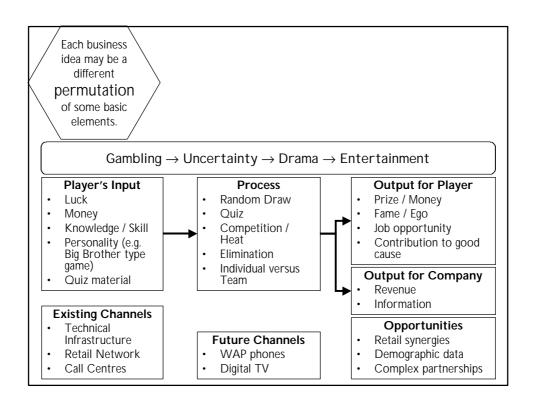
#### Disposal

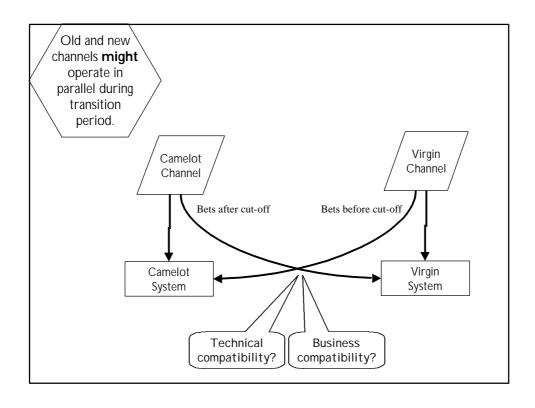
- Find suitable partner to take over responsibility for component.
- Buy back services on a fixed-term contract until termination date
- Reserve option for future services.
- Partner develops alternative uses for component
  - better job prospects for staff?
  - better utilization of assets?

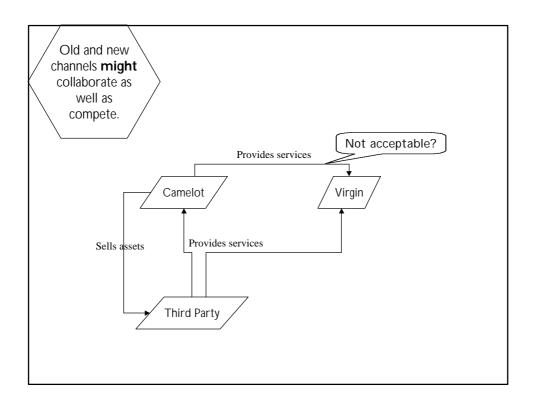
#### Component Selection Matrix

- Some components will not be needed for the most interesting business ideas.
- Some business ideas may use the same subset of components.









Case Study Summary

- Goal: simple yet striking proposition to players and spectators.
- · Based on sophisticated technology
  - technical infrastructure
  - data & knowledge management
- Simple outside, complex inside need to establish a good interface
- Highly flexible business architecture supports diversification and transition.

# Changing Challenges

#### Challenges

- CoEvolution of Whole and Part
  - Supply Chain Example
- Balance the Core and the Margins
- Emerging Wholeness
- Creating and Holding Value
- Evolution & Revolution

#### **Evolution**

• Focus on continuity with past.

#### Revolution

- Focus on break with past.
- Managed Change

#### **Bricolage**

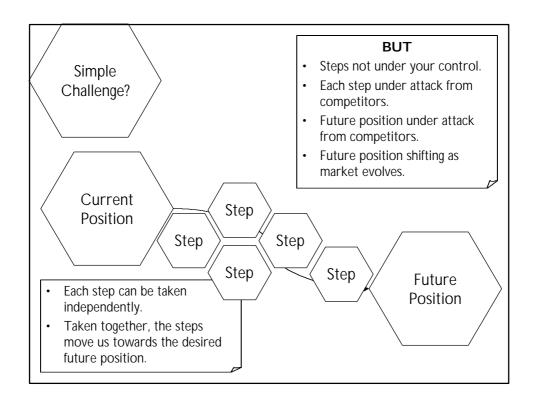
Improvisation

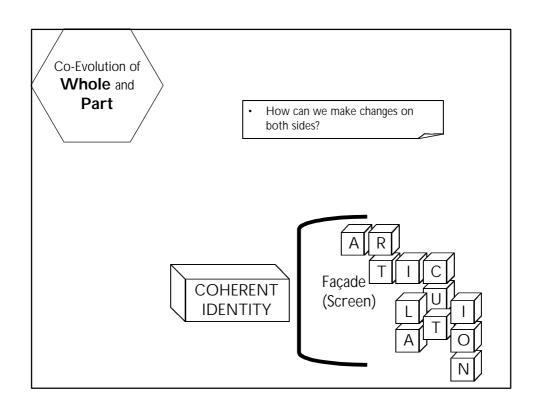
#### Intervention Points

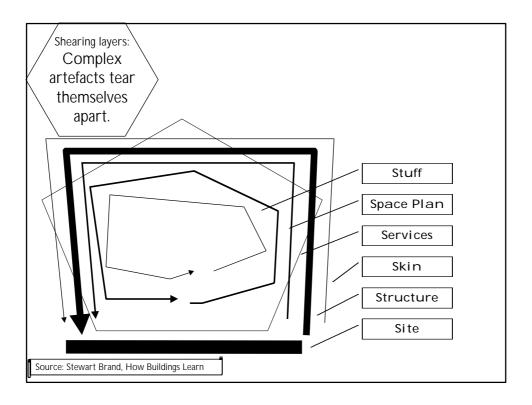
- 9 Numbers (parameters)
  - Subsidies, Taxes, Standards
- 8 Material Stocks & Flows
- 7 Regulating negative feedback loops
- 6 Driving positive feedback loops
- 5 Information flows (glasnost)
- 4 The rules of the system
  - incentives, punishment, constraints, constitution
- 3 The power of self-organization
- 2 The goals of the system
- 1 The mindset or paradigm
  - out of which the goals, rules, feedback structure arise
- 0 The power to transcend paradigms

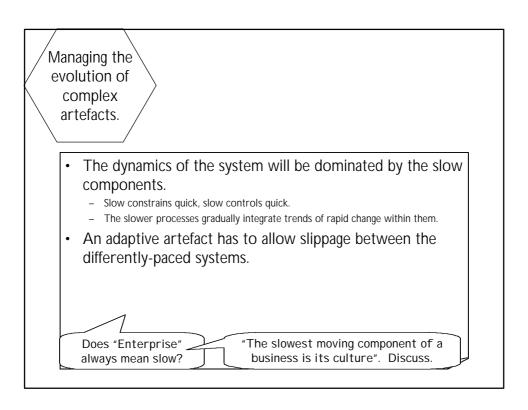
Donella Meadows, Places to Intervene in a System (Whole Earth Review, Winter 1997)

http://www.wholeearthmag.com/ ArticleBin/109.html









Repair Working **Good Links** Create new connections **Pieces** between **Good Pieces** Tighten existing connections Together - reduce interaction distance - increase bandwidth promote trust Over **Coming Frag** Mentation Component Level: Refine Merge and simplify overlapping Relationship Level: or conflicting parts - Repair Discard broken or non-Change Logical Level of Interaction contributing parts Network Level: - Restructure, Change Smooth rough edges Paradoxical Intervention: Further Decomposition

# Working Pieces Apart - Loosen existing connections - increase interaction distance - reduce bandwidth - promote tolerance - Insert and interpose interfaces - Tease apart the lumps - separation of concerns - separation of responsibilities

Some deceptively simple business strategies.

#### **Addition**

- Develop new channels
- Make connections
- Create neighbourhoods

#### **Subtraction**

- Take away complexity
- Remove delay
- Remove controls

#### Multiplication

- Proliferate customers
- Generate/exploit critical mass

#### Division

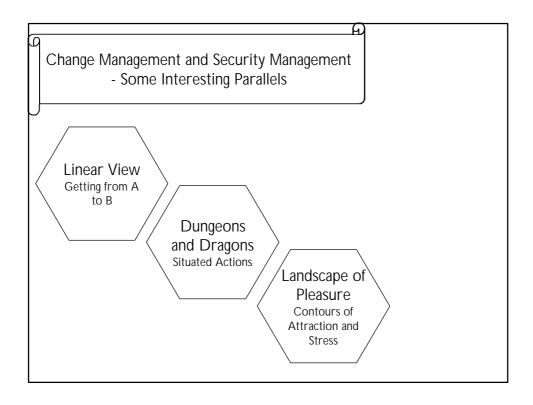
- Slash price
- Reduce churn
- Carve up process

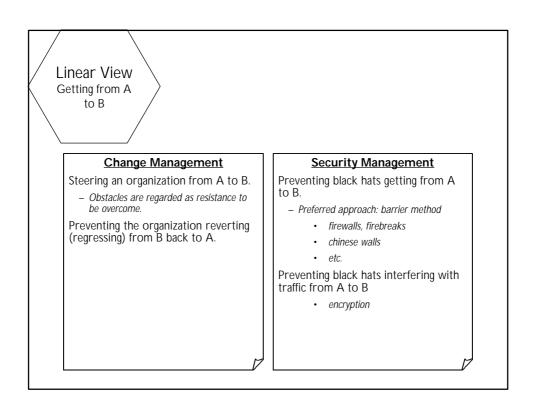
### Kelly: 9 laws of God **Evolution Pitfalls Tips** Beware monoculture (= single point of failure) But don't keep non-viable

- laziness Establish tidiness regime Architectural Feng Shui
- Establish business case regime that properly requisitions variety balancing simplicity and complexity

forms alive out of sentiment or

Disjointed incrementalism





Dungeons and Dragons Situated Actions

#### Change Management

Each space provides access to certain other spaces, and allows further spaces to be glimpsed.

- Move into open spaces that offer maximum opportunity.
- Avoid closed spaces that restrict opportunity.

Some partners can be trusted to explore, while others must be watched carefully.

- Encourage trusted partners to move towards unknown opportunities.
- Obtain binding commitments from unknown or untrusted partners - to keep them on the straight and narrow..

#### **Security Management**

Black hats regard security as a game.

- Preferred approach: situated actions
  - · enter if unlocked
  - · break open if locked
  - take anything, however meaningless it seems at the time, because it may prove useful later
  - keep trying and share findings with others

Security means outwitting and outmanoeuvring the black hats

- · dynamic configuration
- logically impossible mazes

Contours of Pleasure Attraction and Stress

#### **Change Management**

The territory is not flat, but involves contours and forces of attraction and repulsion, stresses and strains.

- It's easier to persuade people to move downhill than uphill.
- Coercion and bribes are used to move people uphill
  - Motivators and hygiene factors.
- And of course slogans
  - "No Pain No Gain"
- People usually go uphill slowly and carefully, and downhill recklessly
  - · Risk Management

Change management may involve controlling the perceived shape of the landscape.

#### Security Management

Security may involve controlling the shape of the landscape - especially as perceived by the black hats.

- Preferred approach: delusion & mirage
  - · Lures and traps
  - Honeypots
  - Decoys
- Visible security serves as a challenge or lure, not a deterrent

#### Conflicts and Rival Agendas

#### **Security versus Marketing**

- · Welcome customers with open arms
- Regard customers with suspicion
  - insurance industry version: all customers are trying to rip us off

#### **Security versus Surveillance**

- Legitimate surveillance
  - government security versus company security
  - law enforcement agencies
- · Competitive surveillance
  - Business intelligence versus industrial espionage

## MyChange versus YourChange

- My change is good, and should be implemented as quickly as possible. (MyImpact)
- My change is good, and should last as long as possible. (MyLegacy)

# Drawing Distinctions

- Change versus lasting change
  - Sea Change
- · Inside versus outside
  - Klein bottles
- Friendly versus aliens (immune system)
  - Customers versus blackhats
  - Hacker (Last Year) → Consultant → Competitor
  - Welcome innovation (best practice) versus external intrusion & disruption