Evolving Domains
Components and Change

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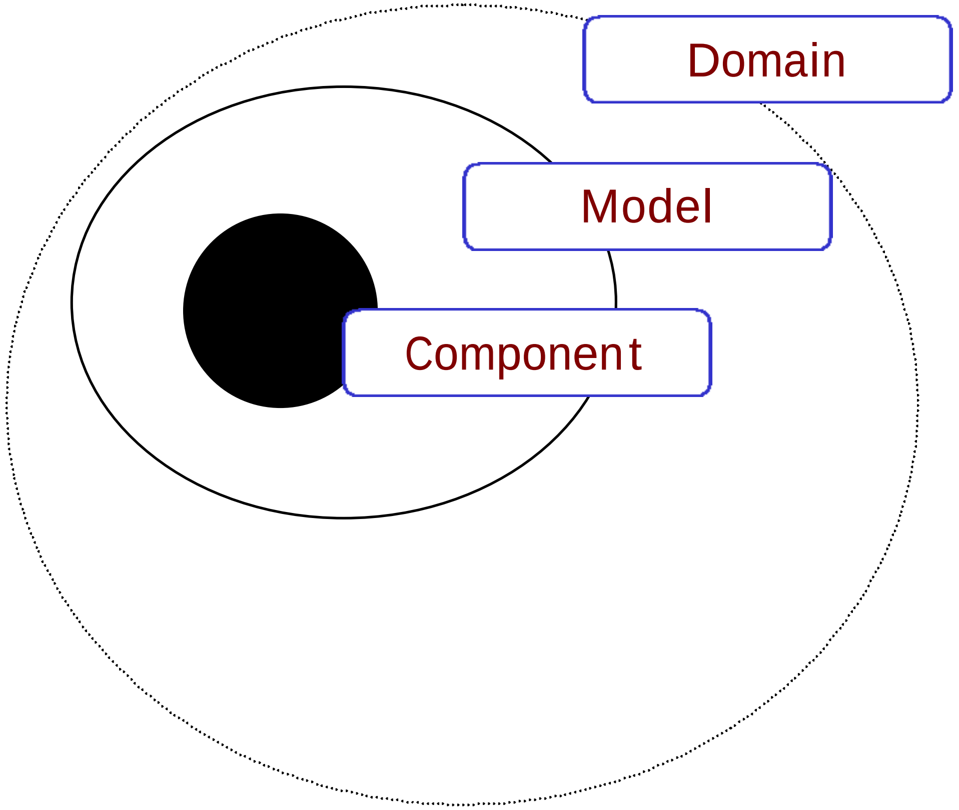
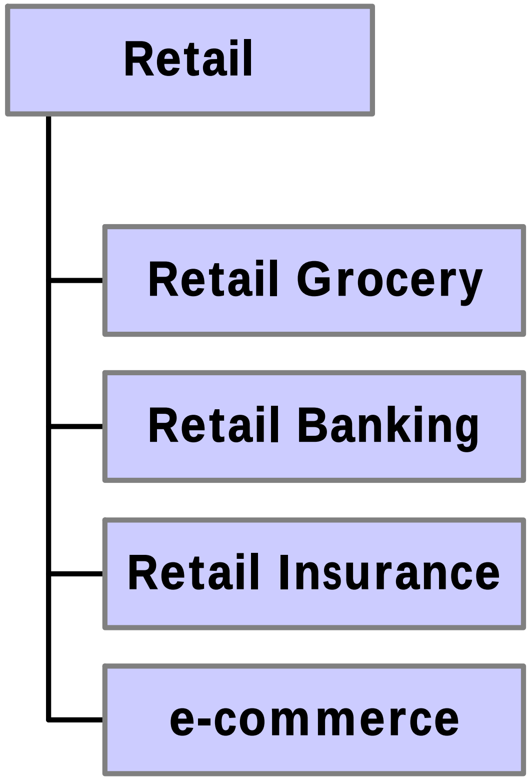
We understand things as belonging to domains.

- [Lewis Mumford] Containers can serve their function only if they change more slowly than their contents.
- [Robert O'Neill] The dynamics of the system will be dominated by the slow components.
- [Shakespeare] … suffer a Sea Change …

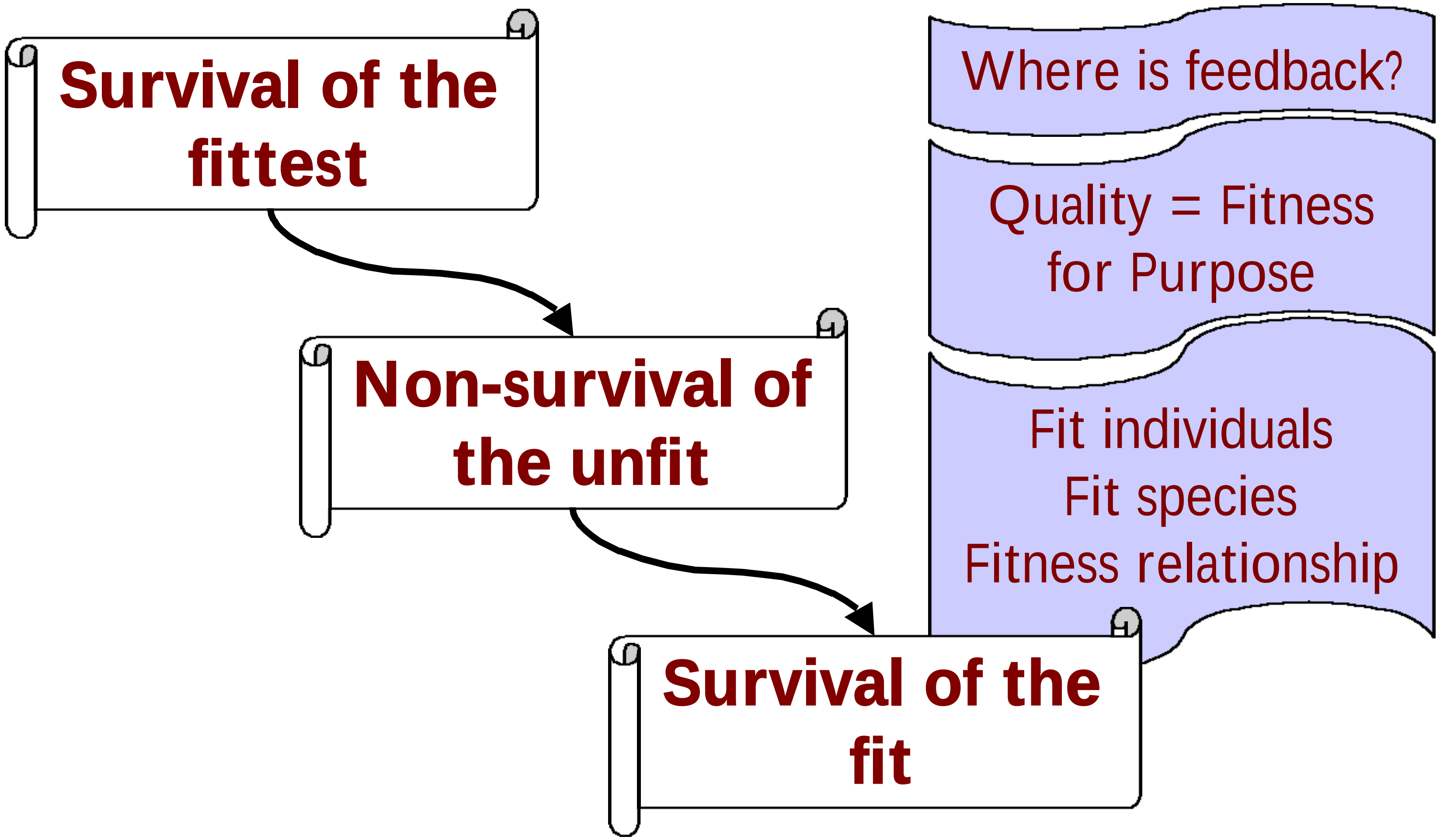


Changing Domains
Some Questions

- How does a domain change?
- How does a domain resist change?
- How does a domain flourish by changing components?
- How does a component flourish by changing domains



Evolution enhances Fitness for Purpose



How does software accommodate business evolution?

Pattern 1: From one to many

Single product/brand $\rightarrow$ Many products

Single location/market $\rightarrow$ Many locations

Data modellers imagine they can build systems to allow for multiple everything.

And object modellers imagine they can abstract everything.

Pattern 2: From few to many

Small number of high-value customers $\rightarrow$ Large number of customers

Then spin off high-value customers into semi-autonomous unit.

Can software help to manage these transitions - or is the software itself struggling to keep up?

How does software accommodate business evolution?

Pattern 3: From many to one

Drug company: Many pills → Single cure

One-stop shopping: Many products → One supplier

Pattern 4: From many to few

Industry consolidation

Product rationalization

Supply chain consolidation

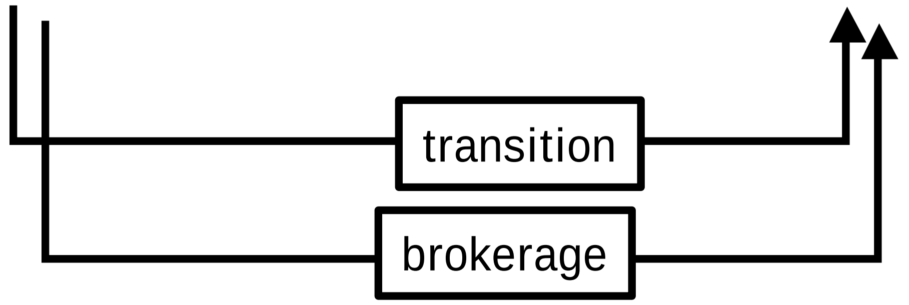
Two types of business relationship

Promiscuous

- Opportunistic - single transaction
- Narrow bandwidth
- High turnover /churn

Steady

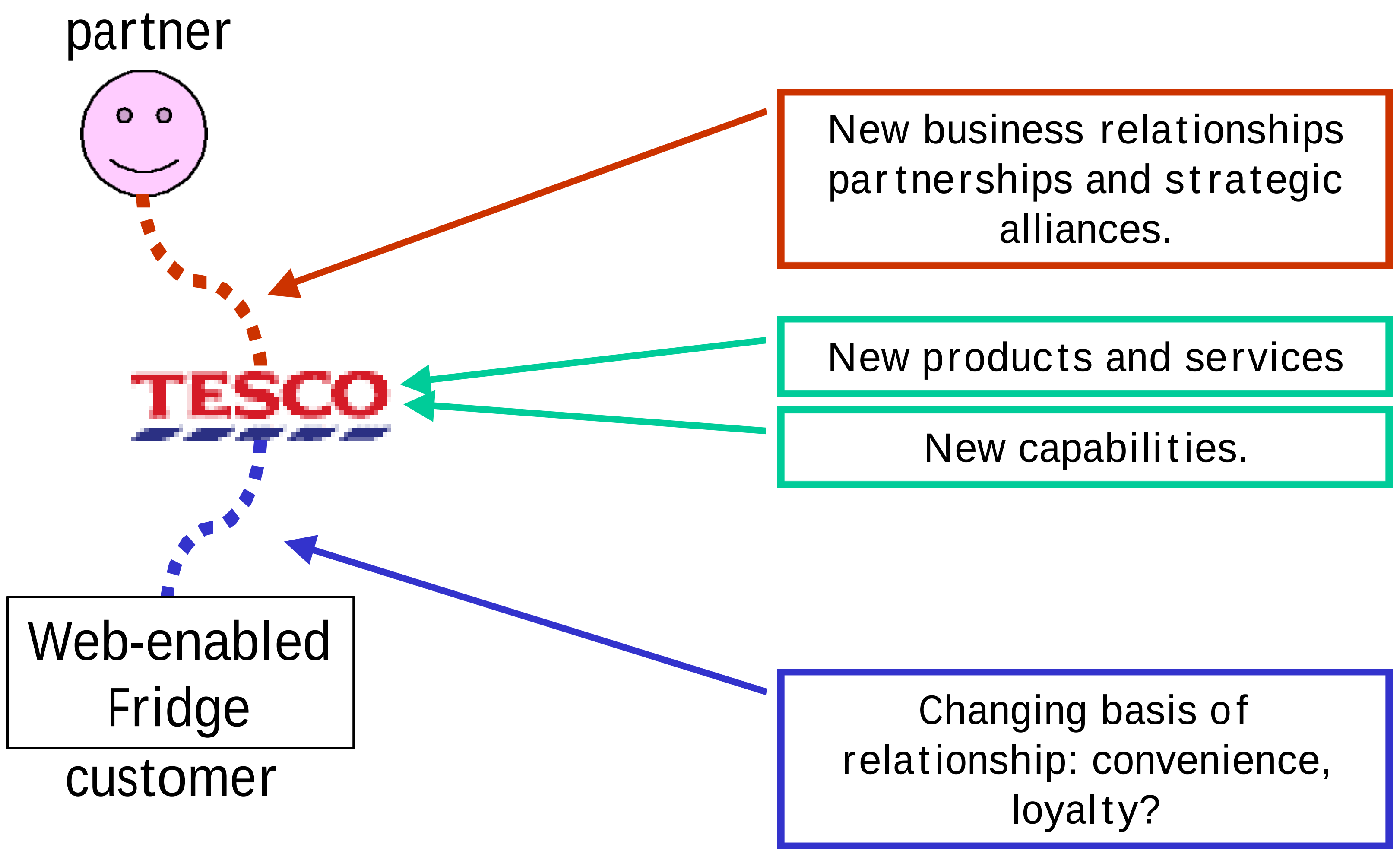
- Long-term relationship, based on growing trust
- Broad bandwidth - may support many processes and products
- Sharing intangible assets - including knowledge



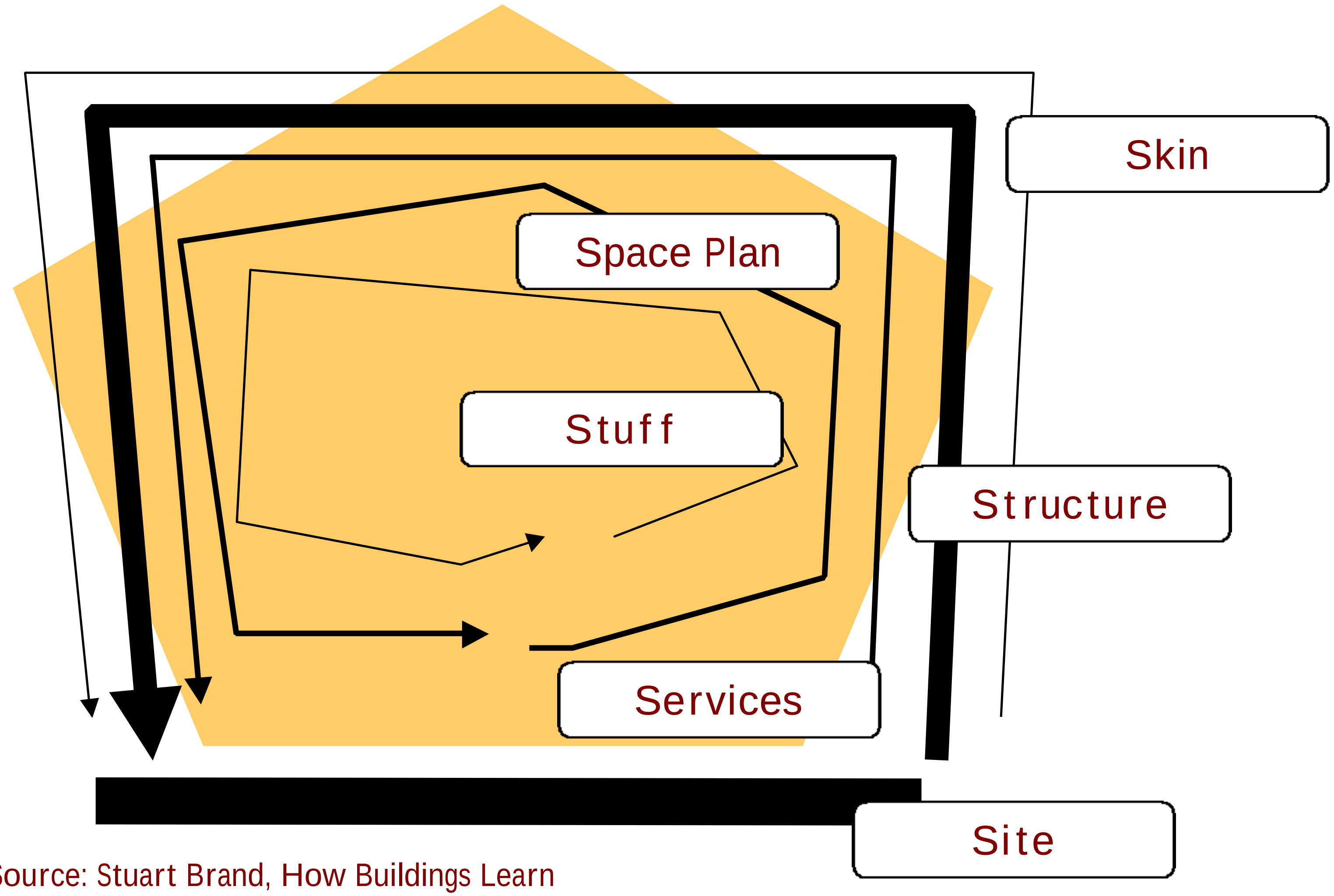
Domain Evolution and Growth

- Website
  - publication process
- Webshop
  - e-commerce process
- Weborg
  - e-business process

Transforming Enterprise

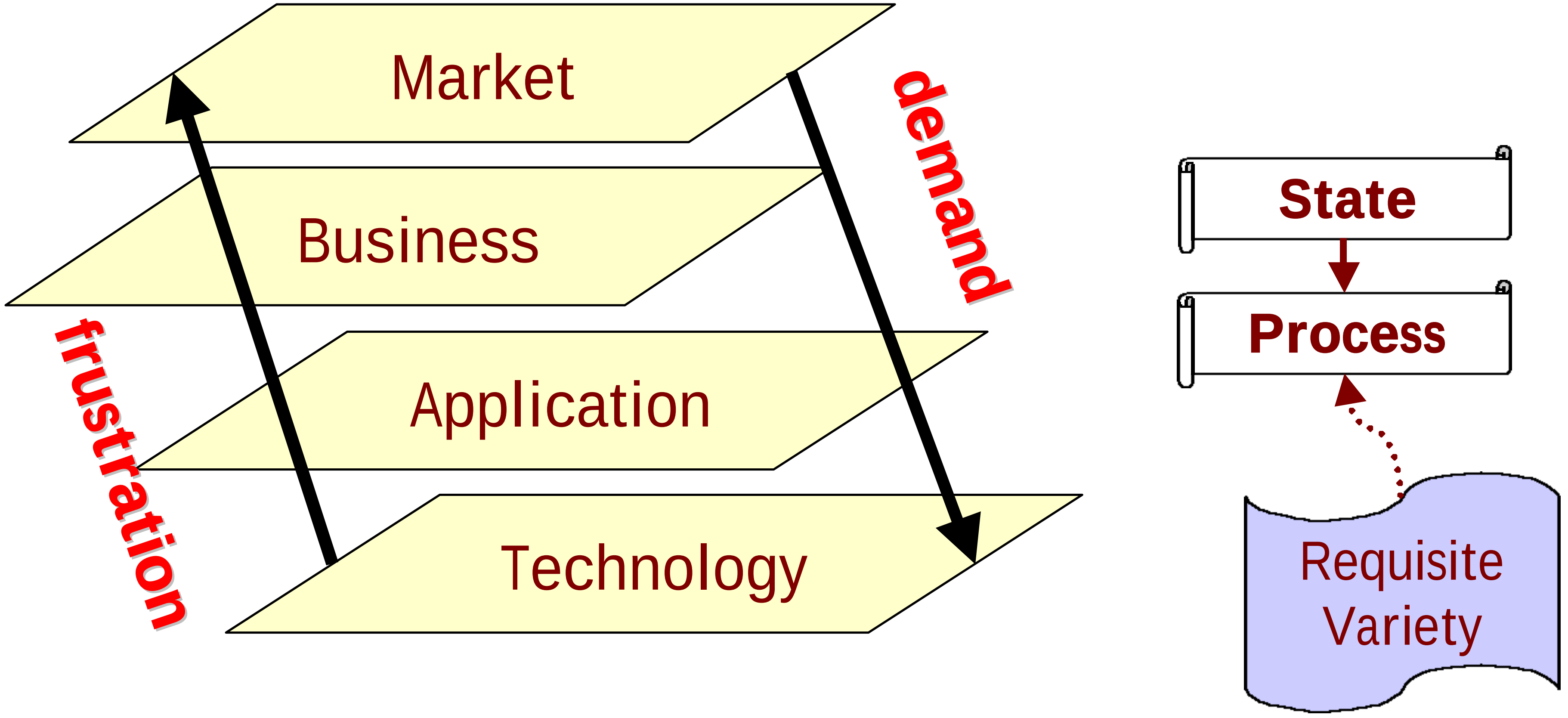

partner
New business relationships partnerships and strategic alliances.
TESCO
New products and services
New capabilities.
Web-enabled Fridge
customer
Changing basis of relationship: convenience, loyalty?

Shearing layers: Complex artefacts tear themselves apart.

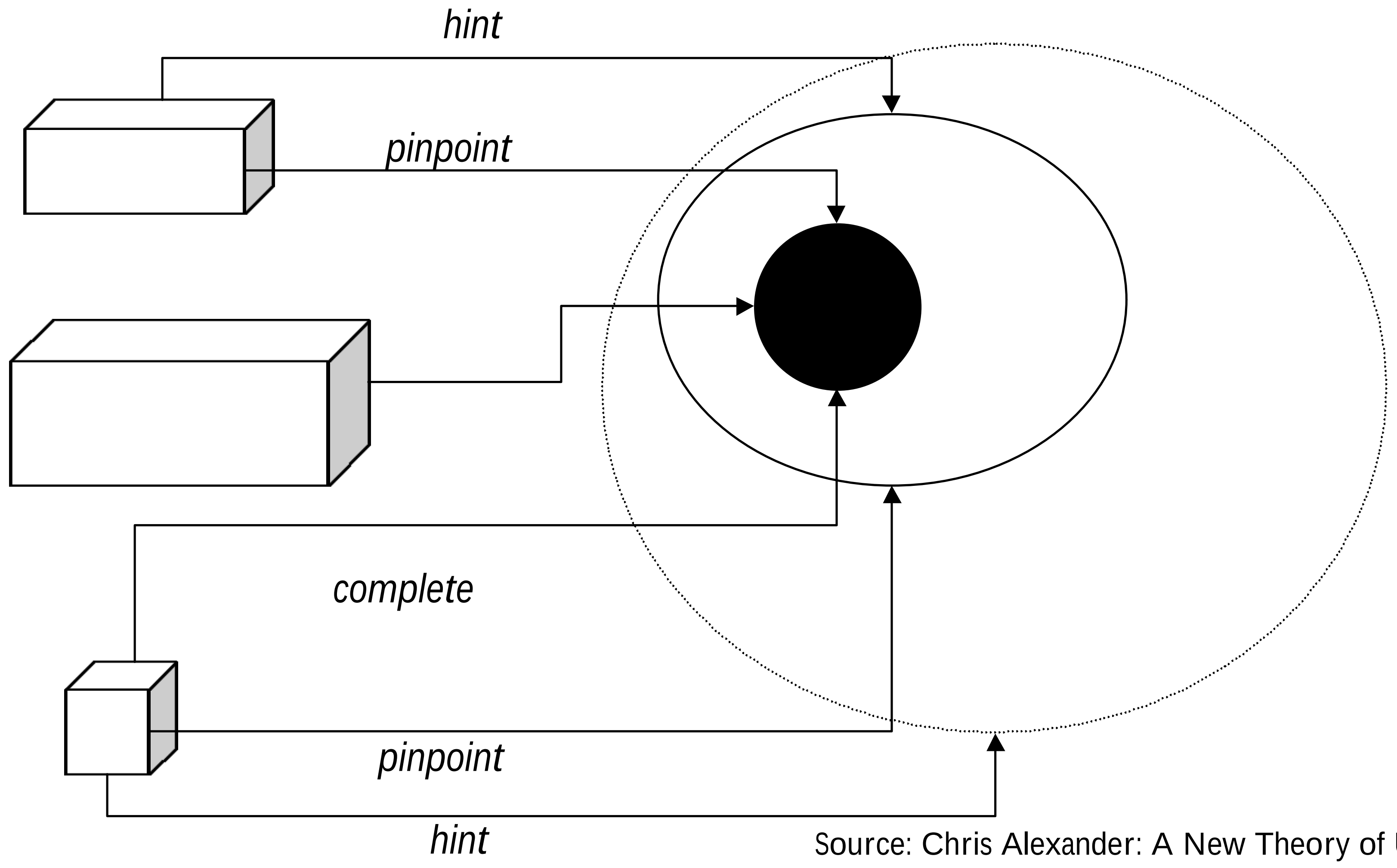


Source: Stuart Brand, How Buildings Learn

There are many layers of systems alignment.



The creation of wholeness (Christopher Alexander)



Source: Chris Alexander: A New Theory of Urban Design

Requirements Engineering

Solution Driven

- Identify Business Problem
- Identify “Users”
- Negotiate Requirements
- Define Solution

- Identify Domain
- Identify Domain Experts
- Define Requirements
- Design Solution Kit

Evolution Driven

- Identify Ecosystem
- Identify Services
- Procure & Release Devices

References

- Chris Alexander, A New Theory of Urban Design
- Stuart Brand, How Buildings Learn
- Kevin Kelly, Out of Control
- Richard Veryard, The Component-Based Business (forthcoming)
- see also: Bateson, Heraclitus, Leibniz, Maturana, ...