Accelerating Innovation Thru Knowledge Management

creating, finding, refining & sharing knowledge assets

Isn’t this now more important than ever to compete in the global economy?

Yes!!!

Intensifying Competition Erodes Profitability

US Profits * as % of GDP

Leading to constant pressure on margins – we have to do more with less, somehow.

Sources: HSBC, Bureau of Economic Analysis

* Non financial corporate sector
The Survivor’s Curse – rolling average in S&P 500

Above Average Returns Early On

Below Average Returns in Late Stages

3 year average rolling average

Dick Foster – Creative Destruction

Average Lifetime of S&P 500 Companies

But why is this happening??
but what blocks you from seeing new patterns?

Mental models, institutional and social practices and path dependencies

The Competency Trap!

to produce a product family
to see new patterns

A Story Of Conceptual Lock-in: Clipper Ships

Glenavlon - 1880s
France II

Preussen
Thomas W. Lawson

path dependency reigns supreme

Wow – devastating even back then
But now think what this means in today’s hyper-competitive, rapidly changing markets.

Both public and private sectors beware!
Keys to Survival in a Rapidly Evolving World
shifting from managing continuity
to managing discontinuity

› sensing the edge (LOOKING AROUND)
(at the edge of your enterprise, industry, region, generation)
› rethinking the very nature of the firm and competitive strategy
› and learning to see and learning to unlearn.

Why unlearning???

Seeing
is harder than it might appear

Let’s explore using basketball

Hmmm, where the heck is jsb headed now?
Yes, learning to see – seeing differently – is important. But in an era of rapid change we must also shift our focus to the edge and transition from managing our stocks of knowledge to participating in flows. (a new challenge for knowledge management strategies)

Ah, edge thinking. Pls give me examples in both public and private sectors.
Finding & Refining New Tactics
Games for training; games for discovery
by listening to the edge

America’s army
Shaking up the status quo – new strategies
and tactics from the digital natives!

A new mechanism for sensing & leveraging
the edge:
In-Q-Tel: venture catalyst for the CIA

Isn’t that an oxymoron, jsb?

Knowledge management for the
public sector must pay close attention
to edge phenomena.
In-Q-Tel - a brief description

- not-for-profit institution that sits ‘next to’ to CIA
- has sister organization inside CIA sponsored by director
- knows the basic problem spaces that the agency faces
- has access to nearly all the deal streams of 1st tier VCs
- senses how a new start up technology might be used (or combined with another existing or new tech) to solve an agency problem.

Keys to success

- CEO is respected by 1st tier vc firms and is acceptable to intelligence community
- Ability to rapidly evolve the institutional structure – institutional prototyping, almost
- Viewing In-Q-Tel as a bridging platform for ‘trickle-up’ technology and as a learning platform for the governments CIOs, etc to get a sense of the speed and degree of ongoing innovation.

Ah In-Q-Tel as a knowledge platform
Eureka --> capturing story-fragments transforming experience into actionable knowledge

Tapping & supporting the community mind

knowledge base

peer review and warranting

tech reps

sense making

A Virtuous Circle
(social software → social capital & intellectual capital)

Social Capital Formation

NOP – network of practice

Intellectual Capital Formation thru local innovation

What a win!! Kind of like Open Source and Wikipedia (but in the 80s).
But let’s spread our knowledge web more broadly:

- with our customers
- with clever individuals/inventors
- with other enterprises via process network

**Informative - (web based)**

Collaborative elicitation and ranking of ideas of participants, by participants in their own words

- idea base
- ranking history db
- adaptive, dynamic sampling
- 10 best presented to participant
- new ideas submitted by participant
- 5 best ranked by participant

Feedback to ranking history db

Lego.com
The Red Lake Gold Mine Challenge

- Mid 90s the 50 year old mine was viewed at its end of life but test drilling suggested there was yet to be found – yet the company’s geologists couldn’t decide where or how to move forward.

- CEO Rob McEwen attends Sloan Management School and learns about open source and Linux. He decides to launch a 575k dollar challenge putting all of precious data on the web and asks for suggestions.

- 52 submissions arrive & judged. 25 semi-finalists chosen – get 10k and are asked to elaborate. Finalists get 105k. 110 deposits were identified, 80% yield.
P&G’s Stance

In 2000 they lost 50% of their market cap (top line stagnant but profit was still growing) (success rate of innovation was 35%) (company insular)

The Challenge:
5% more organic growth with 10% less money

They recognized for the 7.5 k R & D folks there were 1.5 million qualified folks working on neat stuff – around the world
Innovation is happening everywhere. Can we connect (across an edge) and develop? (their view of R&D)

Step 1: InnoCentive.com (45% success rate)
  each challenge must be well defined with an answer that can be readily verified.
  (tapping the high skills base in Asia and their own retirees)

Step 2: Search for inventors who have cool stuff (have found 10k ideas already reduced to practice)
  (35% of their products in last 2 years > 100 products)

P&G – goal of 50% of their innovation done externally

Open Source
Sufficient to build a complete technology stack (primarily Java)

- Web Server
  - Apache HTTP Server
  - Apache Lucene Search Engine
- Directory Services
  - OpenLDAP
- Application Server
  - J2EE
- J2EE Application Servers
  - Jboss, Apache Geronimo (new project), Enhydra (from Lutris, now a defunct business), Sun reference implementation
- J2EE Servlets
  - Apache Tomcat, Apache Jetty
- Web Services
  - SOAP
    - Apache Axis (partial SOAP 1.2 compliance)
- JMS
  - JMS: OpenJMST, ActiveMQ, JBossMQ
- XML Processing
  - XSLT/XPATH
  - Apache Xalan, Saxonica (Michael Kaye’s XSLT processor)
- XML Parsing
  - XML Encryption
  - Apache OpenSSL, OpenSSL
  - XML Security
  - Apache XML-Security: an implementation of the W3C XML Signature standards, and implementations of the W3C XML Encryption standard are currently being developed
- Database
  - RDBMS - MySQL (dual license)
  - XML - Apache Xindice, Sleepycat Berkley, eXist
- Desktop Applications
  - OpenOffice (dual license)
- Operating Systems
  - Linux (various)

Cassatt – 90% of our code base is open source. The rest is our unique value add!

Bill Coleman – CEO

PS – the only cheaper way to build a system than going to India is to pay nothing for it

(Cassatt – Service Level Automation, server farms)
But these examples are just transactional – one offs – with the exception of In-Q-Tel.

Right! Let’s now shift to looking at Process Networks – that are both relational and fundamental to rapid LEARNINGS AND INNOVATIONS when done within a knowledge sharing context.
Chongqing – Disruptive Innovation: bottom up, local modularity, drawing approved

Motorcycle Assemblers: choose focal design
Modularize architecture: drawing approved
Recruit sub-system suppliers

Frame | Engine | Suspension | Fairing/cowling

- Negotiate around prototypes/sample units
- "Swarm" the design – focus only on adjacent units

Export price drops from $700 to $200
China now accounts for 50% of global production

Toyota

- tapping the creativity of the hundreds of suppliers and their employees thru productive friction around the edge

- Lowest cost – not necessarily lowest price
- Create dialogue and collaboration
- Bring us new ideas/innovations
- Respect (open/closed)

exception conditions as action points – create productive friction
the Andon Cord and board.

When an defect is found the person who finds it is to stop the entire line – freezing the context – til the source of the problem can be discovered.

The board shows everyone in the factory where the defect was found
Taiwanese ODM Process Networks – Digital Still Cameras
Percent Of Bill Of Materials* (tell me what, not how)
fast, agile, low cost

Lens (26%)
- FF/AF
- Zoom
- Asia Optical
- Baso
- Kinko
- Largan
- Nikon
- Olympus
- Ricoh

LCD Display (12%)
- AUO
- Casio
- Epson
- Giantplus
- Sharp

Sensors (10%)
- CMOS
- ICMedia
- OmniVision
- Pixart
- CCD
- Matsushita
- Sharp
- Sony

Digital Still Cameras Taiwan ODM’s
- Ability
- Minton
- Aiptek
- Premier
- Altok
- Primax
- Asia Optical
- Skanhex
- Nucam

Back-End IC (7%)
- Connexant
- Sunplus
- ST Micron
- TI
- Zoran

*For 2MP DSC with zoom lens
Li & Fung’s Process Networks
pure orchestrator

5 billion rev - 2002
1 million/employee
30-50% ROE
7500 suppliers
37 countries

Li & Fung Limited

Li & Fung - supply chain orchestration
(around long term relationships)

Learning, bootstrapping skills and knowledge creation
Key Constructs For Process Networks for leveraging open innovation & learning

- Loose coupling between the nodes/players
- Relational, not transactional based
- Trust and shared meaning grown over time
- Dynamic specialization for distinctive capabilities
- Productive friction between the players

Loose coupling is key; but Adam Smith taught us the power of specialization—today it would be dynamic specialization.

Two different mind sets.

- hardwired vs loose coupling
- transaction/price vs relationship/value
- friction to be avoided vs friction turned into creative abrasion
- small number of partners vs large number
- little trust vs growth of trust
- efficiency vs learning and fast innovation
- exploitation vs exploration
- lone genius vs wisdom of crowds.

Can be supply chain, infrastructure, customer facing. Orchestrated by a pure orchestrator or hub/spoke
Performance/Knowledge Fabric Reduce Interaction Costs Across Enterprises

Technology Elements
- Architectures
- Interaction Tools
  - Social software
  - E-learning platforms
  - Web services and networks

Business Elements
- Shared meaning
- Dynamic trust

A New Era in Knowledge Management

Changing Focus of Business Strategy
the importance of KM becomes critical

Dynamic Capabilities
- Hustle
- Complex Adaptive Systems

Shaping Structure
- Getting Better Faster By Working With Others

Collaboration
- Shaping and Participating in Flows

Core Competence
- Ecosystems

Absorptive Capability
The Only Sustainable Edge: learning and building capability faster than others.

Thank You

and remember that the edge transforms the core