Does purchasing need innovation?

About the interaction of PSM and Academics

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Wednesday, 5 December 2018, ZH
Evolution is between

Coincidence?  Imperative?  Design?

?
“It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change.”

~Charles Darwin, 1809
Procurement in the course of time

Economy/academic Trend

Early stages
- Strong regional growth
- International trade exchange
- General access to academia

Mass production
- Standardisation
- Software engineering becomes scientific discipline
- SCM becomes a discipline

Globalization
- Global Competition
- Risk management
- SCM becomes scientific discipline

Evolution of supplier management

Managing purchase order & supplier side inventory

Supplier qualification
Supplier portfolio

Supplier development
Supplier integration

Technology development

- Fax
- Edi, Telex, Phone
- MRP I

- ERP
- Lean Management, JIT, JIS
- VMI

- Advanced Planning
- Internet, platform
- Track & Trace
Ongoing Changes affecting the value chain design

Value chain design

- Industry 4.0 / IoT
- E-commerce/ B2B Integration
- Individualism
- Client controlled Supply Chain
- Regularism
- Limited logistics infrastructure
- Uni-/multi lateral FTA
- “America” 1st

Client controlled Supply Chain
Future: Integrated business ecosystems

digital integrated

value added networks

intelligent

product life cycle

autonomous
What it is about?
Think to the end!

Production Technology

Tool Methodology

Application

Value for firm

Financial impact

Automation / Robotic
- robots
- Machine learning
- Machine to Machine
- Autonomous vehicles
- Drones
- ...

IoT
- Digital twin
- Blockchain
- Cyber security
- Virtual/ augmented reality
- Sensor/actor

Data Processing
- Process data mining
- Interconnectivity
- Cloud computing
- Artificial Intelligence
- Pattern recognition

Wireless communication
- Mobile device/app
- 5G

Decision making
- scenario
- multi criteria
- process
- negotiating

Analytics
- Visualization
- Interpreting
- Sensitivity
- Recommending
- scoring

Design Tool
- Process Design
- Business model design
- Network
- Design patterns / principles

Optimizing Tool
- OR
- Simulation
- ...

PSM
- Demand management
- Spend management
- Market analysis
- Supplier management

Warehouse & distribution
- Infrastructure Management
- Inventory management
- Routing management
- Picking, Tracing,...

SCM
- Network management
- SC Integration
- SC Planning
- flow of goods/value
- ...

Cost reduction
- direct
- indirect
- opportunity

Performance improvement
- availability
- Lead time
- OTD

Innovation
- New products
- New services
- New business models

Logistics Services
- Agility
- Transparency, Risk
- Compliance
- ...

Revenue
- New customers
- New products
- New services

Profit
- Net margin
- ROI/ ROCE
- NPV

Liquidity
- Cash cycle
- debt ratio
- ...

Tool
Methodology

Financial
impact

SWISS LOGISTICS INNOVATION CENTER

05.12.18
Building the bridge from research to industry!

Improved Value Chain Design

Tools for value chain design

Applied research & development

Technology (e.g. Big Data, Semantik, Robotik, AI, Cloud, Simulation, Block Chain)

„Value Chain design is strategic lever of a competitive economy and sustainable society“

Technology driven solutions for value chain design, operation and optimization

Efficient and effective Knowledge & Technology Transfer

Technology-development, basic research
Digital PSM!

**THE FUTURE OF PSM 4.0**

- **Processes**
  - object of digitalization

- **Products, Services, Tools**
  - user of digitalization

- **digital Business Model**
  - enabler of new innovative digital business models
The changing environment requires adaptation

With increasing competitive pressure, advances in technology and changing customer needs, the learning organization is becoming more important than ever. (Garvin, Edmondson, Gino, 2008, HBR)
Future value creation networks are complex adaptive systems. Previous, traditional management approaches are not suitable for this.
improve your organization for excellence with intensive KTT

traditional type: operational Focus

excellence type: Shared KTT

Value Chain Management

Group A  Group B  n

Development
Strategie, Services Prozess, IT, ...

Value Chain Management

Group A  Group B  n

Knowledge & Technology Transfer (KTT)

e.g. DHL, UPS, K&N, Dachser, Aldi, Lidl, IKEA, Post, SBB cargo Cargologic,
Maturity level of PSM

**Innovate**
Being ahead; creating competitive advantages by R&D

**Invest**
Closing up; create competitiveness by copy & paste

**Ignore**
Lagging behind; loosing competitiveness,
Perspectives of Academic – Industry interaction

**INNOVATION**
- Collaborate in customized Innovation programs
- Collaborate in customized project
- Collaborate in R&D projects
- Collaborate in studies
- Early involvement of students
- Hire graduates

**LEARNING**
- Postgraduate programs
An integrated Innovation System is funded by the government

The innovation process opens up new potentials for economy and society.

Enabling
- Higher education
- Applied research & development

Transfer
- Innovation in value chain design

Result
- Increase profit
- Improve efficiency
- More flexibility
- Less cost
- Less environmental impact
- Better working conditions

Higher education is essential for systematic Innovation!
The VNL ...

- is the first and only thematic network to promote innovation in value chain design and management (INNOSUISSE)
- networks science and industry in order to carry out joint innovation projects
- committed to sustainable value chain design and management from the idea to the market.
The offer of VNL
With stage and gate to success:

The solutions are:

1. Thinkable
2. Desirable
3. Feasible
4. Realizable
5. Practicable

**Network**
- max. 50% of project cost funded by INNOSUISSE

**Supported by VNL/Logistics Innovation Center**
Your benefit!

**INDUSTRY**
- **Offers:**
  - Entrepreneurial knowhow
  - Market proximity
  - Praxis relevance

- **Offers:**
  - R&D knowhow
  - R&D infrastructure
  - Technology knowhow

**PROJECTS**
- **INDUSTRY:**
  - resources
  - 10% cash

**R&D PARTNER:**
- Resources
- Knowledge

**INNOSUISSE**
- max 50% of project cost to R&D

**FIRM IMPACT**
- More sales
- New customers
- Better quality, service, cost
- Sustainability, compliance

**FUNDING**

**SOCIETY IMPACT**
- Sustainable ecosystem
- Competitive economic system
- Employment
- Growth of GDP

**IMPACT**

**Swiss Logistics Faculty**
(20 Universities)

**Funded Projects**
15-20 / year by ca. 300 TCHF

**Innovation Initiative:**
100 Mio. CHF

**1 Bill. CHF**
How it works!

1. Contact VNL, SLIC or Members of Swiss Logistics faculty
2. Preliminary discussion; problem idea, potential
3. Apply for initial feasibility check (Innoscheck?) → NDA, LOI
4. Search and evaluate project partners → LOI further partner
5. Clarify state of the art and innovation level
6. Complete INNOSUISSE application → LOI project
7. INNOSUISSE decision → INNOSUISSE- / IPR-contract
Example 1

KTI Project 18779.2 PFES-ES: Selection and use of supplier management instruments in international procurement in line with the situation

Solution: Supplier Management instruments

Case: Complexity of situation

Efficiency gap
Effectiveness gap
Zone of strategic fit

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Example 2

- PSM 4.0 working group

PSM 4.0 implementation pilots:
- Seizing potentials of IoT
- Pilot Design
- Pilot Implementation

Technology Management:
- State of the Art for IoT Technologies
- Evaluating Technology
- Knowing further application

Identify and master challenges and opportunities during implementation
In times of constant change, increasing complexity and dynamics ("Dynaxity"), we see that many companies fail due to inertness and a lack of adaptiveness. Organizational ecology presents evidence suggesting that most organizations are largely inert and ultimately fail.

### Managing Dynaxity

- **Ambidexterity**: The ability of a firm to simultaneously explore and exploit, enables a firm to adapt over time.
- **Dynamic Capabilities**: The ability of a firm to reconfigure assets and existing capabilities, explains long-term competitive advantage.

<table>
<thead>
<tr>
<th>Sense Capability</th>
<th>Seize Capability</th>
<th>Reconfigure Capability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explore</td>
<td>Exploit</td>
<td></td>
</tr>
<tr>
<td>Be flexible in the future</td>
<td>Be efficient today</td>
<td></td>
</tr>
</tbody>
</table>

### Quick Response Supply Ecosystem

The Internet of Things (IoT) is increasing the need to look beyond the enterprise’s four walls to keep pace with fast-changing markets. In this ever-changing environment, the extended supply ecosystem can be far more dynamic than in traditional markets.

- **Manage Supplier**
  - Supplier Sourcing
  - Supplier Development
  - Supplier Evaluation
  - Phasing out of Suppliers
- **Manage Supply Ecosystem**
  - Commodities
  - Bi-lateral SRM
  - Social network
  - Social media technology
Danke für Ihre Aufmerksamkeit.

www.vnl.ch
I'm getting the practice explained to me by theorists.

<table>
<thead>
<tr>
<th>Stufe</th>
<th>Beschreibung</th>
<th>Beispiel</th>
<th>Nutzen</th>
<th>Anteil* pro Jahr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>passiv Anstellung von BA/Ma Absolventen</td>
<td>Unternehmen mit komplexen logistischen Aufgaben</td>
<td>Geprüftes Fach- und Methodenwissen in Logistik</td>
<td>&lt; 0.3 %</td>
</tr>
<tr>
<td>2</td>
<td>Lernen Frühe Einbindung von Studenten: Praktikum, Werkstudent, Studentenprojekt, Ba-Arbeiten</td>
<td>Kurzfristige Aufgaben mit komplexerer Analyse, einfache Lösungen in Logistik</td>
<td>Betreutes Lernen mit den Studierenden</td>
<td>&lt; 1.0 %</td>
</tr>
<tr>
<td>3</td>
<td>Wissen/Verstehen Wir beteiligen uns an der Ausarbeitung von Marktstudie und Fallstudien, Benchmarks, Ma/PhD Arbeiten</td>
<td>Systematische Analyse mit vertieftem Wissenszuwachs in Logistik und SCM</td>
<td>Marktwissen, Best Practice, Best in class</td>
<td>&lt; 0.5 %</td>
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<tr>
<td>4</td>
<td>Anwendung FE-Projekten und Produktentwicklung</td>
<td>Vertiefte Analyse und konkrete Entwicklung von marktfähigen Produkten für Logistik und SCM</td>
<td>Innovative Produkte und Lösungen, Patente</td>
<td>&lt; 0.4 %</td>
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<tr>
<td>5</td>
<td>Zukunft mittel-und langfristig Investitionen in Forschungsstellen und -programmen</td>
<td>Erforschung von Basistecnologien, Grundlagen und Zukunftsthemen von Logistik und SCM</td>
<td>Machbarkeit und Nutzen von Zukunftsthemen</td>
<td>&lt; 0.1 %</td>
</tr>
</tbody>
</table>

*) Von ca. 5500 Unternehmen, die mehr als 50 Mitarbeitende haben (geschätzt)
Qualification program for PSM 4.0

1. Industry 4.0 and future of purchasing – introduction –

2. Thinking in (digital) Business Models

3. Value Chain Design (design of E2E value creating architectures)

4. Management of Cooperation und Networks (strategic partner management)

5. Digital Process Management

6. New Ways of Networking (Processes & Tools of networking)

7. Supply Risk Management (Processes & Tools)

8. Purchasing Business Intelligence (Master Data Management & Big Data Analytics)

9. Technology Scouting & Monitoring / push Innovation

10. Sustainability & circular Economy