Design Science Research –

focussing IT project management and IT consulting

– chartset 2009 –

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Professorship for Information Management

Prof. Dr. Georg Rainer Hofmann

- Strategic Data Processing Concepts
- Issues of General Leadership
- Information System Management
- Consulting Firm Management –
  - since 1997 in Aschaffenburg, Hochschule Liechtenstein,
  - Uni Würzburg, Seminars „Consulting of Consultants“, a.o.
- „Mathematics and Philosophy“

http://www.fh-aschaffenburg.de/
References

Design Science in Information System Research (➔ J v Brocke)

- Alan R. Hevner, et al. – berichtet von Martin Bichler

Design Research in Information Systems

  http://www.isworld.org/Researchdesign/drisISworld.htm

Design Science Perspectives on IT-Consulting (➔ J v Brocke)

- Björn Niehaves and Jörg Becker – mod., Georg Rainer Hofmann
Some Remarks ...

Science of Science – Wissenschaftstheorie

- Model of the World, Perception, Building Theories, Empirism, Pragmatism, etc.

Project Management

- Traditional and non-traditional Aspects: Identification, Risks, etc.

Case Studies – former work and references
What is knowledge?

Approach due to Wille:

- **Sign** = „everything may be a sign“
- **Data** = Sign + Syntax
- **Information** = Data + Semantics
- **Knowledge** = Information + Ability to use it

Knowledge and Expertise:

- **Expertise** =(!) Ability of a person to use information
Examples for Knowledge:

Approach after Wille:
- Expl. Data = an address on a letter envelope
- Expl. Information = interpretation of the address
- Expl. Knowledge = ability of the postman, to deliver letters.

Knowledge and Expertise:
- **Expertise** = (!) Ability of a person to use information
Expertise without an information basis!

Approach after Wille:
- Expl. Data = A. Sommerfeld: "Theorie des Kreisels" (2 Vol) ???
- Expl. Information = interpretation of higher mechanical theory ???
- Expl. Knowledge = ability of a child to drive bicycle.

Knowledge and Expertise:
- *Expertise* =(!) Ability of a person to use information
Model of three worlds (Popper, Eccles):

1: 
**Objects / Matter:**
- Things
- Trees
- Houses
- Computers
- Living Creatures

2: 
**“The Self“**:
- Psychology
- Moods
- etc.

3: 
**Language:**
- Words
- Texts
- Data
- Concepts
- Software
- Memory
- Content

„The subject acts **semantically** among language and things.“
Role of knowledge in the three worlds:

1: Objects / Matter:
   Things, Trees, Houses, Computers, Living Creatures

2: "The Self":
   psychology, moods, etc.

3: Language:
   Words, Texts, Data, Concepts, Software, Memory Content

Manipulation of data by a person

Manipulation of data by a machine

Non-descriptive perception of an object

Interpretation of a text, application (expertise) of knowledge in a process
Role of knowledge in the three worlds:


2: "The Self": psychology, moods, etc.

3: Language: Words, Texts, Data, Concepts, Software, Memory Content

Address on an letter envelope

Automatic reading of address and sorting letters

Interpretation of address by the postman

Ability of postman to deliver letters correctly
The “Secret” of Consulting Success is ...

1 ... at a minor part the technological expertise, **by far more important are ...**

2 ... the “Definitionship” of the processes and the culture of the firm,

3 as well as effective, *non-coersive* discipline and control,

4 ... self-discipline and responsibility of the professional staff members,

5 for the clients and the further development of the firm.
### IT Products are different from IT Projects

<table>
<thead>
<tr>
<th>Products</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology-based,</td>
<td>Service-based,</td>
</tr>
<tr>
<td>Design-oriented</td>
<td>Dialogue-oriented</td>
</tr>
<tr>
<td>“Target” are machines</td>
<td>“Target” are enterprises</td>
</tr>
<tr>
<td>(computers)</td>
<td>(persons)</td>
</tr>
<tr>
<td>High technological</td>
<td>High social competence</td>
</tr>
<tr>
<td>competence</td>
<td></td>
</tr>
<tr>
<td>Fixed prices (minus</td>
<td>Flexible prices (negotiable)</td>
</tr>
<tr>
<td>discounts)</td>
<td></td>
</tr>
<tr>
<td>High market transparency</td>
<td>Low market transparency</td>
</tr>
<tr>
<td>Low margins, critical</td>
<td>Higher margins,</td>
</tr>
<tr>
<td>profit</td>
<td>“watch maker effect”</td>
</tr>
<tr>
<td>higher pressure on prices</td>
<td></td>
</tr>
</tbody>
</table>
Taxonomy of the IT market: Products vs. Projects

- **Strategic management consulting incl. IT**
  - Global Planning, Second Opinions, Nat'l und Int'l "Awareness"

- **Business process-oriented IT consulting**
  - Enterprise-wide Usage of IT, Concepts, Purchasing

- **Adoption of software and hardware**
  - Specifications und Adoptions on System level, "Introductions"

- **(Standard) software, hardware**
  - Licences, “per Piece”, Standard SW, Standard HW

- **Retail of standard products**
  - Consumer-oriented Retailer, Discounter

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**problem-specific**

- Owners, CEO, Leaders
  → Head of Department
    → Head of IT

**product-specific**

- Head of Department
  → Head of IT
  → Project Manager
  → Yes / No (Prices?)

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Offers of Products and Projects: Investment Volume, Mobilisation Time Frame

### Strategic management consulting incl. IT
- Top Strategic Consultants, Freelancers, McK, ATK, BCG, ...

### Business process-oriented IT consulting
- Small & medium Consulting firms, „Lünendonk’s 25“

### Adoption of software and hardware
- (small & medium) SW Firms, System Providers
  - trad. IT producers
  - ca. 1 - 2
  - ca. 1 - 6 m

### (Standard) software, hardware
- trad. IT producers, large SW enterprises and firms (SAP, MS, ...)
  - ca. 3 - 5 - 7
  - ca. 0,5 - 3 a
  - ca. 1 - 3 a

### Retail of standard products
- Retailers, Warehouses
  - über 6

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**Invest Index:**
- smaller than 1
- ca. 1
- ca. 1 - 2
- ca. 3 - 5 - 7
- über 6

**Mobilisation Time Frame:**
- in fact 0
- ca. 10 - 20 d
- ca. 1 - 6 m
- ca. 0,5 - 3 a
- ca. 1 - 3 a
Projects of the “Professional Service Firm”

- Strategic management consulting incl. IT
- Business process-oriented IT consulting
- Adoption of software and hardware
- (Standard-) software, hardware

"Brains" - Analytical, Standing
"Grey Hair" - Experience
"Procedural" - Efficiency

Project orientation: Client first, Firm second, ...
Further processing of primary products
"Value-added Re-Selling" and services

mod., accord. to: David Maister, PSFM
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Consulting Revenue in Germany in Bill. €


9.6 10.9 12.2 12.9 12.3 12.2 12.3 13.2 14.7 16.4 18.2 18.X

mod., nach: BDU

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Growth Rate of Segment Revenue vs. GNP from 1998 to 2009 [%]

- 2002: 11,9%
- 2003: 5,7%
- 2004: 7,3%
- 2005: 11,4%
- 2006: 11,5%
- 2007: 10,7%
- 2008: 3,2%
- 2009: 1,5%

mod., nach: BDU

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Consulting Intensity in Germany in [%]

mod., nach: BDU

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Professional Service Firm: Balance of three factors

1) Kind of Projects
2) Honorary
3) Career Prospects

Clients / Market
(Service Offers)

Leverage

Profitability
(Success)

Hiring Employees
(Satisfaction)

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Marketing Measures

1. **Broadcasting**: Public Relations for New Contacts
2. **Courting**: *ex-ante*: Caring for a single (prospective) Client
3. **Superpleasing**: Surpassing the expectations of the Client
4. **Nurturing**: *ex-post*: Caring for a single (prospective) Client
5. **Listening to the Market**: Definition of new Services

The Result is quantitative in Terms of ...
Professional Service Firm: 
Marketing Statistics

Sum of effort for marketing and acquisition:
according to the \textit{cg / ncg} relation

Win / loss ratio:
sum of offers vs. der “won“ projects
Average: \( \sim 50\% \), ideally: \( >90\% \), public context: \( \sim 15\% \)

Effort of acquisition vs. project volume:
Average: \( \sim 10\% - 15\% \), ideally: \( \sim 1\% - 2\% \)

Recurring business ratio:
“Zero-effort in acquisition” business!

Innovation ratio:
Part of revenue related to new issues and tasks, new products

Penetration ratios:
Client? Market segment?

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Marketing Measures: Broadcasting, by Effectiveness

1. Signalling of **genuine own expertise** via proprietary research; such as benchmarking, empirical studies, articles in revised journals, etc.

2. **Client seminars** for an important relevant topic

3. Contributing to **events of (at) the client**, illustrating project results

4. **Newsletter**, regarding relevant(?) topics

5. Personal networking, **“political” activities**, associations, etc.

6. Fairs, **advertising**, sponsoring, etc.

The result is the “qualified new contact“ (so-called “lead”).

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Professional Service Firm: 
Data Structure Lead List (1)

Index: 
no deleting in the list! 
function of an eternal chronicle

Consulting Issue: 
prospective project name 
co-ordination of the acquisition (per market segment !)

Client, Contact Person: 
incl. a „check“: Position, standing, budget? 
address! 
experience being made? Creditworthiness?

Own Team; Project Management: 
responsible for acquisition progress, 
maybe some persons with special budget, 
(later) project manager
Professional Service Firm: 
Data Structure Lead List (2)

Status: cyclical model: Contact, pre-proposal, proposal, presentation, Loi, contract, on hold (until?!), lost

Follow-up; Date: which is the next status of the lead – when will it be reached?

Location in Time, over quarter or year:

Prospective Volume of Contract (T€): realistic estimation is absolutely mandatory!

Winning Probability (p): realistic estimation is absolutely mandatory!

Volume * p (T€); Location in Time: Short / Long in Leads? - Budget vs. Ressources!
Professional Service Firm:  
Data Structure Lead List (3)

**Contact:** Who? Exactly? Standing? Creditworthiness? Exact Issue?

**Pre-Proposal:** Rendering of Expertise

**Proposal:** Qualified Rendering of Product

**Presentation:** „Proposal at Hand and by Heart“, Beauty Contest, Q&A

**On Hold:** Why that? How long? Trigger for Progress?

**Loi:** Instead of Contract due to legal Complexity

**Contract:** [Problem and Mistake #1: Take the money and run ...]

**Follow-up:** Some other issues and problems? - Cross-Selling!

**Lost:** WHY? Will we do better next time? Any Lessons learned?
Professional Service Firm: Career Model (1)

**Assistant:**
Meeting deadlines, professional and correct operation of defined tasks in projects and back-office

**Consultant:**
Management of own schedule and work capacity "managing the self", analytical understanding and solving of problems, professional expertise, intelligence, social and communicative capability, tolerance, taking(!) advice, OA skills, presentation and documentation skills

**Senior Consultant:**
Advanced expertise, “broader range” – (partly) project management, Contribution to business development: Acquisition, innovations, etc.

**Manager:**
Formal und professional correct project management, providing guidance and leadership for a (virtual) team in expertise and business
Professional Service Firm: Career Model (2)

**Senior Manager:**
- All-over responsibility for an area of professional business:
  - Management of personal, acquisition, project portfolio
- Pro-active “discovery” and development of new business:
  - Planning and controlling relevant investments,
  - Leadership in knowledge management (KM)
- De-facto Partnership

**Partner:**
- „Positioning“ of the PSF: Reputation, development of image
- Social “Standing” – “society top level” compatible
- Long-term-oriented care for clients’ relationship

**Senior Partner:**
- Even improved “standing” – “international society top level” compatible
- Steering (international) activities and policy of the PSF
- Fostering of international and global acceptance of the PSF
Professional Service Firm: Quantitative Global Controlling

Recruitment Process
Permanent Education

Acquisition
Marketing

Number of employees
Number of hours per year

CG : NCG

Number of cg hours
Average number of hours per project – project size

Number of projects

Average honorary per hour

REVENUE

Compensation, bonus, etc.

Other expenditures, infra structure, etc.

Career failures

Win loss ratio

Number of cg hours

CG : NCG

Number of ncg hours

Average number of hours per project – project size

Number of projects

REVENUE

Compensation, bonus, etc.

Other expenditures, infra structure, etc.