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Prof. Dr. J. Strikwerda CMC
Director Nolan Norton Institute
Partner Nolan, Norton & Co.

hans.strikwerda@nolannorton.com

Professor of Organization & Change – Amsterdam Business School

ENTERPRISE SYSTEMS:
THE NEED FOR AN INFORMATION POLICY
What is beyond Nolan’s S-curves?

- Period of Traditional Principles
- Period of Creative Destruction
- Period of Transformed Enterprise
- Integrated Enterprise / open (e-) business models
Why are there so many horror stories about failed or out-of-control ERP projects?

- Because many CEO’s, CFO’s and CIO’s, as well as consultancies, and even academics, still are trapped in industrial economy based paradigms on business, organization and management.

“If the development of an enterprise system (ERP) is not carefully controlled by [general] management, management may soon find itself under the control of the system.”

Davenport 1998
Do successes exist? Yes ...

**Observed benefits of enterprise systems / ERP:**

- Higher strategic maneuverability
- Competitiveness through information dominance
- Competitiveness through business model innovation
- Higher value appropriation from the market
- Higher degree of sensing the customer
- Faster and more precise response to customers
- Higher degree of exploitation of synergies
- Better exploitation and development of (tacit) knowledge through resource mobilization
- Higher attractiveness to creative knowledge workers
- Lower agency costs
- Lower costs of the finance function
- Lower costs in modular back office processes
- Lower cost of capital, less capital tied up
- Convincing business case for IT-investments
Alignment trap 1:
ES/ERP-systems are configured on basis of the unit-organization, which economically is obsolete

Structure = tool for organizing & managing information

Information is organized disembedded from structure

Open business models
Alignment trap 2:

ERP-systems are based on accounting profit and subsequently defined management information whereas firms should be managed on basis of economic profit and management information defined by that.

- Management Information comprises:
  - Financial and non-financial information
  - Leading and lagging parameters
  - External- and internal information
  - Structured and non-structured data
  - Discursive and disinformation (+ frames to cope with - )

- Information must be:
  - Relevant but redundant
  - Timely
  - Trustworthy: individuals must understand where information comes from, from who; “ex-post data debriefing (feedback) closes the loop in the trust cycle”
  - Accessible for all on the same team (= not used for internal power games)

- Information must:
  - Trigger the strategic development, innovation, exploration, learning processes
  - Create a competitive strength
  - Trigger timely adaptation and transformation, create discomfort
  - Enable accountability, compliance
Alignment trap 3: ERP-systems are based on budget-driven, bottom-up resource allocation as method for strategy execution, whereas modern strategy execution is based on validated cause-and-effect relations

Bower’s (1970) bottom-up Resource Allocation Process has run into the wall (Bower et al. (2005):
• Budget gaming / politicking
• Too high information asymmetry
• Doesn’t allow for intangible assets
• Doesn’t facilitate synergies
• Doesn’t facilitate modern business models

Strategy execution (Kaplan & Norton 2008) is through:
• Strategic themes as cross unit accountable dimensions, funded by STRATEX
• Synergies are achieved planned & controlled through multidimensional accounting & control systems
• Time phased objective setting based on cause-and-effect relations and rolling forecasts
• Resource mobilization
Alignment trap 4:
ERP-systems are aimed at to be-in-control on level 1: **existence**, whereas to be in-control also requires capabilities of level 2: adaptation and level 3: transformation

Control exists of three levels:*  

1. **Existence or being**, the problem of maintaining organization—even in the absence of external change—counter entropy = \( AO/IC \), ERM-COSO

2. **Experience or behavior**, the problem of adapting goal-directed processes to variation and change in external conditions \( \rightarrow \text{flexibility} \)

3. **Evolution or becoming**, the problem of reprogramming less successful goals and procedures while at the same time preserving more successful ones: **business transformation**

To be in-control requires the organization of:

1. Goal-information (mission, strategic intent, objective function)

2. Motivation- or axiological information

3. External information
   - Material information
   - Eidetic information

4. Instruction- or effect-information

5. Pragmatic information (= management information)

Alignment trap 5: ERP-systems mechanize processes defined by existing business models whereas modern competition is on innovation of business models and thus processes.

Alignment trap 6: ERP-systems are based on information as a residual factor in the production function, whereas in modern business models information is an input in the production function.

The Elements of a Successful Business Model (Johnson, Christensen & Kagermann 2008)

Customer Value Proposition
- Target customer
- Job to be done (use value)
- Offering

Key Resources
- People
- Technology, products
- Equipment
- Information
- Channels
- Partnerships, alliances
- Brand

Key Processes
- Processes
- Rules and metrics
- Norms

Profit Formula
- Revenue model
- Cost structure
- Margin model
- Resource velocity

But missing in this model are at least:
- How to appropriate created value from the market
- How to defend one’s position in the market / create-maintain market power
From the business-IT alignment trap to the transformation of the business


Therefore essential layers are missing in Weill & Ross’ concept of IT-governance: the strategic use / business use of information = information management

<table>
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<tr>
<th>Information as strategic environment</th>
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<tbody>
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<td>Information as a resource</td>
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<tr>
<td>Information management / policy</td>
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**IT principles decisions**
High-level statements about how IT is used in the business

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<th>IT architecture decisions</th>
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<tbody>
<tr>
<td>Organizing logic for data, applications, and infrastructure captured in a set of policies, relationships, and technical choices to achieve desired business and technical standardization and integration</td>
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<th>IT infrastructure decisions</th>
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<td>Centrally coordinated, shared IT services that provide the foundation for the enterprise’s IT capability</td>
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<th>Business applications needs</th>
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<td>Specifying the business need for purchased or internally developed IT applications</td>
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<th>IT investment and prioritization decisions</th>
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<td>Decisions about how much and where to invest in IT, including project approvals and justification techniques</td>
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Information is required for empowerment (leadership) of the (front-line) worker to create adaptability and agility of the firm.

- In a decentralized organization as many as possible members, on basis of:
  - Goal information + targets
  - Axiological information
  - External information
  - Effect-information
  - Pragmatic information
  - Fast feedback
  - Allocated decision rights
  - Resource mobilization
- ... can decide for themselves which of their alternative initiatives and decisions will contribute most to the performance of the firm, including externalities (Arrow, 1974) = to have sense & response to changing customer requirements = to have a best use of human capital

Information Policy: typical constitutional decisions by the Board required to create a multidimensional information space for the organization

1. The primary profit center is the customer
   a) Other reportable dimensions and their parameters are decided on basis of strategy, causal relations, possible new behavior of customers and competitors and legal requirements
   b) Performance is simultaneously reported on multiple dimensions

2. All customers are corporate customers, as are suppliers, and have one profile

3. There is one company wide (global) extended general ledger for all operations and entities, based on semantic standardization of the fields of the records as set by corporate accounting, this ledger records financial and non-financial data, external transactions, internal transactions, etc.

4. Customer data is corporate wide accessible, as is the data in the general ledger, except for some security restrictions (absence of information asymmetry)

5. All initiatives are to be based on integral business cases

6. Reporting of turnover and income (cost allocation) on each of the reportable dimensions and entities is by corporate accounting only (one trusted source for management information); no transfer prices

7. Contribution is recorded at the level of the individual creative knowledge worker, title moves with the individual, rewards are based on corporate performance
What is or should be the purpose of the information policy of a firm?  

Expressed in Simons’ four levers of organization design

- **Strategy and Structure**: To provide for effective strategy execution and to trigger the timely change to new business models and their execution.
- **Self-Interest and Mission Success**: To provide incentives and feedback that both are rewarding the individual and maximize the value of the firm.
- **Accountability and Adaptability**: To assist front line workers in responding to new customer demand, that is profitable for the firm and makes the firm to adapt to operational changes in the market.
- **Ladders and Rings**: To create successful teams and effective self-coordination which produces actions that are profitable to the firm.

An information policy is needed, as an essential element in the internal governance of the firm, which answers a.o. the following questions:

1. What is and should be the content of the various types of cybernetic information?
2. What types of information and knowledge plays, will or should play a role in the firm’s present and future business models?
   1. What do the business models imply, based on their cause-and-effect relations, what will be the parameters for planning & control?
   2. What are and will be the needed reportable dimensions to be in-control?
3. On what type of information dominance is needed in the market to have a sustainable competitive position, respectively strategic maneuverability?
4. What should be sources (sensors) of data, type of sensors?
5. What should be, and when, the stage of analytical based competition and required analytical skills?
6. Where in the organization should be organized the capability of sense making?
7. Who owns / controls which information in the organization, who should have access to which information? (what information asymmetry is acceptable?)
8. What information is needed, and how, to support cooperation, teamwork and learning processes?
9. What types of controls are needed (traditional, panoptical, fast feedback)?
10. What should be the reference for semantic data standardization? (idiosyncratic, open with the outside world, industry standards)
11. What linkages with the environment are needed with respect to exchange of information and knowledge? (incl. accountability, compliance, regulators)
12. What social systems are required to create trust in the firm’s information space?
Information policy is an essential power and the (legal) responsibility of the CEO as part of his responsibility for the (internal) governance of the firm.

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<th>Tasks*</th>
<th>Description</th>
<th>Information policy</th>
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<tr>
<td>Prévoyance</td>
<td>C’est-à-dire scruter l’avenir et dresser le programme d’action;</td>
<td>Looking forward how the information economy will change customers, competitors, employees, suppliers, competition, industries, translating this into actions for the firm</td>
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<td>Organisation</td>
<td>C’est-à-dire constituer le double organisme, matériel et social, de l’entreprise</td>
<td>Defining the information space of the firm, values (axiological info) as needed for identification, defining a proper incentive &amp; reward system</td>
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<td>Commandement</td>
<td>C’est-à-dire fonctionner le personnel, le recrutement, la formation du personnel et la constitution du corps social</td>
<td>Selecting people who have sense making capability, for each of the tasks, who take initiatives (leadership) monitoring that decisions are made timely</td>
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<td>Coordination</td>
<td>C’est-à-dire relier, unir, harmoniser tous les actes et tous les efforts</td>
<td>Creating a performance measurement infrastructure that enables team work, providing fast feedback and identifying free riders, creating semantic standardization of basic data</td>
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<tr>
<td>Contrôle</td>
<td>C’est-à-dire veiller à ce que tout se passe conformément aux règles établis et aux ordres donnés</td>
<td>Validating assumed cause-and-effect between initiatives, goals set, metrics and targets, monitoring integrity of data and definitions</td>
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