Aalto-yliopisto
Kauppakorkeakoulu

ALIGNING CONTROL SYSTEMS TO THE CONTEXT

Prof Teemu Malmi

AGENDA

- The impact of strategy on control system - innovation and ambidexterity as strategic objectives
  - Why this is important
  - What do we know, based on the extant literature, on how management controls and accounting support innovations and ambidextrity
- Do similar controls work in different cultural environments?
- What challenges multi-nationality creates for control?
- Controls at not-for profit organizations
- Summary / Wrap-up

STRATEGY AND MANAGEMENT SYSTEMS

- How should we design our performance management system depending on what strategy we adopt?
- Corporate strategy basic options - related or unrelated diversification -> degree of interdependence between units and how to exploit synergies between interdependent units?
- Business strategy can be conceptualized in many ways
- Typical distinction in this literature is between cost leadership and differentiation, and how these require different emphasis on efficiency and innovation => implications on e.g. performance indicators in use


Performance Management
2022 / T.Malmi

INNOVATIONS

Defined as implementation of creative ideas within an organization (Amabile et al, 1996)

⇒ Create, select and implement

The role of accounting and control in these phases?

”picking a man of genius, giving him money,
and leaving him alone”
Conant, 2002

CREATIVITY: INNOVATION RESEARCH

- Creativity is a function of **creative-thinking skills, expertise and motivation**
- Key finding: intrinsic motivation is much more important than extrinsic
- This does not promise much to accountants….
- However, if controls are perceived as a package containing various methods / tools / practices that are used to make sure organization achieve its objectives, there might be something in fostering creativity for designers of performance management systems

CREATIVITY: INNOVATION RESEARCH

- Organizational **culture** is key <- e.g. clear goals
- Christensen (2003): **organizational structure** is one key attribute to make sure organizations continue to innovate
- Organic structure, flat / non hierarchical organizations
- Apple did not have divisions with P&L responsibility, they had only one P&L for the whole company
- Sony failed in portable music business because different divisions (responsible for their own profits) couldn't get their act together

CREATIVITY: INNOVATION RESEARCH

- **Innovation managers / internal innovation coaches**; someone at the top has responsibility, these appointments signal importance
- Lot of emphasis on **communication**
  - e.g. by architecture (Pixar, MIT, ….), by cross-functional / cross-regional teams, …

CREATIVITY: INNOVATION RESEARCH

- **Innovation related measures** on every managers scorecards
- **Rules and policies:**
  - Employee's are allowed to pursue their own ideas as long as it has some connection to firm activities (Google 20% of time, 3M 15% of time)
  - The # of personnel in any unit is not allowed to exceed e.g. 200 people

OPEN INNOVATION

Open innovation is a method of innovation …. which allows companies to essentially source some of their innovation efforts to outside parties, often through contests where individuals compete to develop the best solution to the innovation challenge the company has set forth. Companies perform open innovation by essentially putting forth an innovation problem they are facing to the public (or, at least, a community of individuals outside of their firm) and then inviting individuals to submit solutions to that problem.

Clayton Christensen, blog, September, 2012

CREATIVITY: INNOVATION RESEARCH

- E.g. Procter & Gamble
  - Target: Half of the new ideas need to come outside the organization
  - Own R&D further develop these ideas
  - 35% of new products and 45% of product improvements are from these external sources
  - P&G has doubled their success in innovations
- Chesbrough: Introduce a company wide **incentive system** which reward for all external ideas company decides to utilize

ACCOUNTING RESEARCH

- Fragmented in many ways
- Most of the early literature has not made a distinction between creation, selection and implementation

CREATIVITY: ACCOUNTING RESEARCH

- Old paradigm: MCS inhibit innovation as they are based on different logics than creativity
  - Creativity imply variations, exceptions, flexibility and uncertainty
  - MCS imply routines, little variation and certainty (see Davila et al., 2009; Dunk, 2011)
  - MCS hinder intrinsic motivation (see e.g. Adler & Chen, 2011)
  - Personnel controls more effective than accounting and behavioural / action controls when task uncertainty is high (Abernathy & Brownell, 1997)
- New paradigm emerging on the positive role of accounting and control (Davila, Foster & Oyon, 2009)

CREATIVITY: ACCOUNTING RESEARCH

- Simons four levers of control to balance innovation and control
- Interactive use of controls related to innovativeness (e.g. Simons,1995; Davila 2000; Henri, 2006)
- Assumption: Effect of interactive use of MCS on innovation is due to increased communication
- Adler & Chen (2011) address the impact of controls on individual level motivation in the context of large-scale collaborative creativity (LSCC)
  - LSCC need both creativity and co-ordination

CREATIVITY: ACCOUNTING RESEARCH

- Adler & Chen propositions:
  - The use of belief systems positively associated with identified motivation
  - Enabling (coersive) use of boundary and diagnostic systems positively (negatively) associated with intrinsic and identified motivation
  - The use of interactive controls positively associated with intrinsic and identified motivation
  - Optimal mix of diagnostic and interactive controls positively associated with intrinsic and identified motivation
  - Incentives combining individual-based and group-based component positively associated with intrinsic and identified motivation

CREATIVITY: ACCOUNTING RESEARCH

- The role of incentives in creativity (Steven Kachelmeier and his colleagues 2008, 2010)
- Laboratory experiments
- Creativity-based compensation improves average creativity ratings
- Creativity-weighted schemes produce same creativity, but lower quantity than quantity only schemes
- If all output is desirable, then using quantity only incentives produce better results
- If mediocre output is harmful, then rewarding both quantity and creativity serves better

SUMMARY ON CREATIVITY

- Long standing debate about the role of controls in creativity still to be resolved
- Both innovation and accounting scholars have suggested the use of controls may also have positive effect
- There is also some evidence to support these claims, but there is still lot to be done to increase our understanding of the impacts of various controls (positive and negative) and the mechanisms that produce these creative outcomes


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"THIS IS WHERE WE MERGED OUR 'CREATIVE' AND 'ACCOUNTING' DEPARTMENTS."

SELECTION: INNOVATION RESEARCH

- Innovator's Dilemma (Clayton Christensen, 1997) : New technologies cause great firms to fall
- Firms pay too much attention to current customers and their **profitability** and do not pay enough attention to new (disruptive) technologies
- One of the reasons relates to accounting: new disruptive technologies do not seem big / profitable enough at the outset
- This would suggest accounting is counterproductive in disruptive innovations, but has value in innovations in sustaining technologies

SELECTION: ACCOUNTING RESEARCH

- Accounting research has not paid much attention to selection criteria in the studies of innovation
- Bisbe & Otley (2004), in their literature review, discuss the role of accounting in blocking innovation excess
- We teach capital budgeting techniques => we may ask e.g. what is, or could be, the role of real-option modelling techniques in selecting among innovative ideas

IMPLEMENTATION: INNOVATION RESEARCH

- Innovator's solution, Christensen, (2003)
- **Resources** (people), **processes** (patters of interaction, coordination, communication, and decision making; the most crucial ones are enabling processes that support investment decisions), **values** (how employees make prioritization decisions; e.g. by requiring certain gross profit margin)
- Be patient for growth, be inpatient for profits

IMPLEMENTATION: INNOVATION RESEARCH

- Lagging indicators, typically on the basis of market or financial performance.
  - E.g. the percentage of sales coming from products introduced in the past several years; ‘time to profit’
- Leading indicators, which measure process input quality and/or quantity, or factors conditioning innovation.
  - The number of patents issued and granted; the percentage of R&D spent on long term, high-risk/high-impact projects
- In-process indicators, which measure process quality in terms of deliverables and time or cost compliance.
  - E.g. the number of non-value-adding changes in projects past a certain point; the % of project review gates passed according to schedule
- Learning indicators, which measure the improvement rate on critical performance targets for the business.
  - the product stabilization period (from launch until quality and performance meet expectations); the ‘half-life’ of a specific improvement

IMPLEMENTATION: ACCOUNTING RESEARCH

- In this phase much less disagreement - Management control can have a positive impact
  - provides structure to convert creativity into value (Davila & Ditillo, 2011; Chapman 1998)
  - Translate ideas into action (Chenhall, 2003)
- MCS are used during new product development projects to reduce uncertainty (Davila 2000)
  - MCS perceived as systems to support decision-making as opposed to systems to reduce goal divergence problems
- When MCS provide information directed towards coordination and learning, they affect performance in positive way (e.g. Koga & Davila, 1998; Nixon 1998)

AMBIDEXTRITY: MANAGEMENT LITERATURE

- Duncan (1976), structural ambidextrity
- O'Reilly & Tushman (2004): Create separate units that are integrated at senior management level
- Common vision and values
- Incentives from unit based profits to common targets across all units
- Gibson & Birkinshaw (2004): contextual ambidextrity = within single unit

AMBIDEXTRITY: MANAGEMENT LITERATURE

- Gibson & Birkinshaw (2004)

”building a set of processes or systems that enable and encourage individuals to make their own judgments about how to divide their time between conflicting demands for alignment and adaptability”

- It is not about formal organization structure, charismatic leadership or strong culture that makes ambidextrity to work, but **performance management** and social context
- The interaction of stretch, discipline, trust and support lead to an ambidextrous organization

AMBIDEXTRITY: ACCOUNTING LITERATURE

- Simons (2005) discuss tensions of organization design
- He refers to a challenge of achieving results and retaining the ability to experiment and adapt
- Simons proposes a theory of organization design
- He argues that the relationship between span of control and span of accountability has important implications for innovation
- Proposition: Entrepreneurial gap (and hence innovativeness) is created by setting span of accountability (e.g. fairly broad, aggregate performance measures) wider than span of control

AMBIDEXTRITY: ACCOUNTING LITERATURE

- Bedford & Malmi (2015) study of control configurations in 400 Australian firms suggest that firms with high emphasis on innovations use both “devolved” and “hybrid” configurations, the latter being a combination of organic elements as well as bureaucratic elements -> response to ambidextrous demands?

SUMMARY

- Both innovation and accounting literature suggest that accounting and control can have a positive role in various phases of innovation activities
- Evidence far from conclusive, more research needed
- Do not focus only on innovations, try to understand the issue of ambidextrity as well

MELNYK ET AL STUDY (2014):

- It seems, that strategies change to adapt environmental and other changes, but KPIs remain same over time
- Is this sensible or not?

PERFORMANCE ALIGNMENT MATRIX

		Outcome: General	Outcome: Specific
Solutions	General	Assessment-driven management	Outcome-driven solutions
	Specific	Solution-driven outcomes	Measurement-driven management

Fig. 2. The Performance Alignment Matrix.

Source: (Melnyk et al. 2014, MAR)

BEDFORD, MALMI & SANDELIN STUDY (2016)

- Looks controls used by prospectors and defenders
- Suggest there are number of effective MCS configurations for various strategic orientations
- Prospectors (“innovators”) use results / cybernetic controls interactively and combine that with organic organization structure
- Defenders rely of diagnostic use of controls and mechanistic organization structure
- => different strategic orientations seem to require different use of performance management elements to be effective

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IMPACT OF NATIONAL CULTURE ON CONTROLS

- Quite a lot of research on cultural differences in accounting and control exist, mainly comparing Anglo-Saxon to Eastern cultures
- Hofstede and e.g. GLOBE studies have looked for cultures and shown that people vary considerably on many dimensions
  - Individualism vs. collectivism
  - Power distance
  - Uncertainty avoidance
  - Masculinity
- These are likely to have implications on how performance management should be exercised -> How?

IMPACT OF NATIONAL CULTURE ON CONTROLS

- In addition to culture, many other ”institutional” aspects do vary between nations
  - Corporate governance regulations
  - Employment law and contract law
  - Power of labor unions
  - Banking system / financial markets
  - Governance institutions (role of auditors, finance authorities,..)
- These may also have an impact on how performance management systems are designed and used

MALMI ET AL JoMC PAPER (2022)

- Study of how and why the use of controls vary between Anglo-Saxon, Germanic and Nordic countries
- Anglo-Saxon SBUs
  - delegate decision rights, i.e. are decentralized
  - participative (e.g. strategic planning)
  - emphasize performance based pay

  more than their counterparts in Germanic and Nordic regions do
- Comparing Germanic to Nordics
  - Germanic rely more on individual behaviour in performance evaluation, whereas Nordics rely more on quantitative measures.
  - Nordics select employees based on values and rely on rotation in promotions more

MALMI ET AL JoMC PAPER (2022)

- The role of subordinates in
  - action planning
  - diagnostic use of budgets and performance measurement systems
  - etc.

appear similar across regions, despite differences in cultural traits.

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ADDITIONAL CHALLENGES FROM MULTINATIONALITY

- Inflation
  - How e.g. ROI behaves in high and low inflation environments?
- FOREX risks
  - Performance evaluation can be done in local currencies, so MNCs need to decide whether local management should be exposed to this risk or not
- Political risks
- Availability of talent
  - When employees are less talented, decision making is typically more centralized and action controls are used
  - When mobility of workforce is low, less need for long term incentive plans

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NOT-FOR-PROFIT ORGANIZATIONS

- Give examples of different not-for-profit organizations?
- How big is their role in contemporary western societies?
- What are the key reasons for challenges in performance management in many of such organizations?
- In governmental organizations role of budgets is big, not necessarily in “performance management”, but in controlling costs

PRODUCTIVITY HIGHLY EMPHAZISED IN GOVERNMENTAL ORGANIZATIONS

Paul Krugman:

”Productivity isn’t everything, but in the long run it is almost everything”

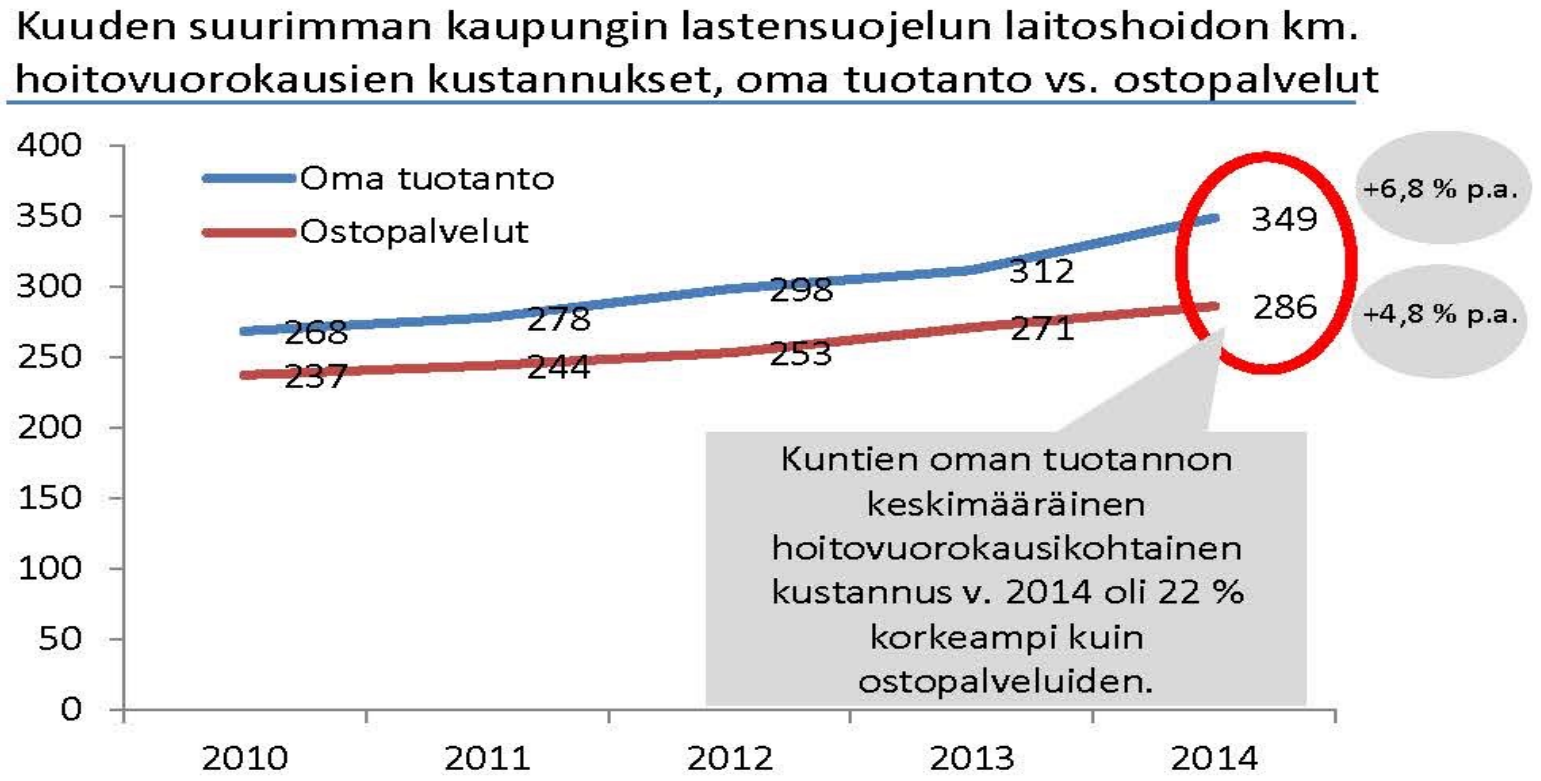
The age of diminished expectations, 1990

BIG DIFFERENCE IN PRODUCTIVITY?

Child welfare - cost of institutional care:

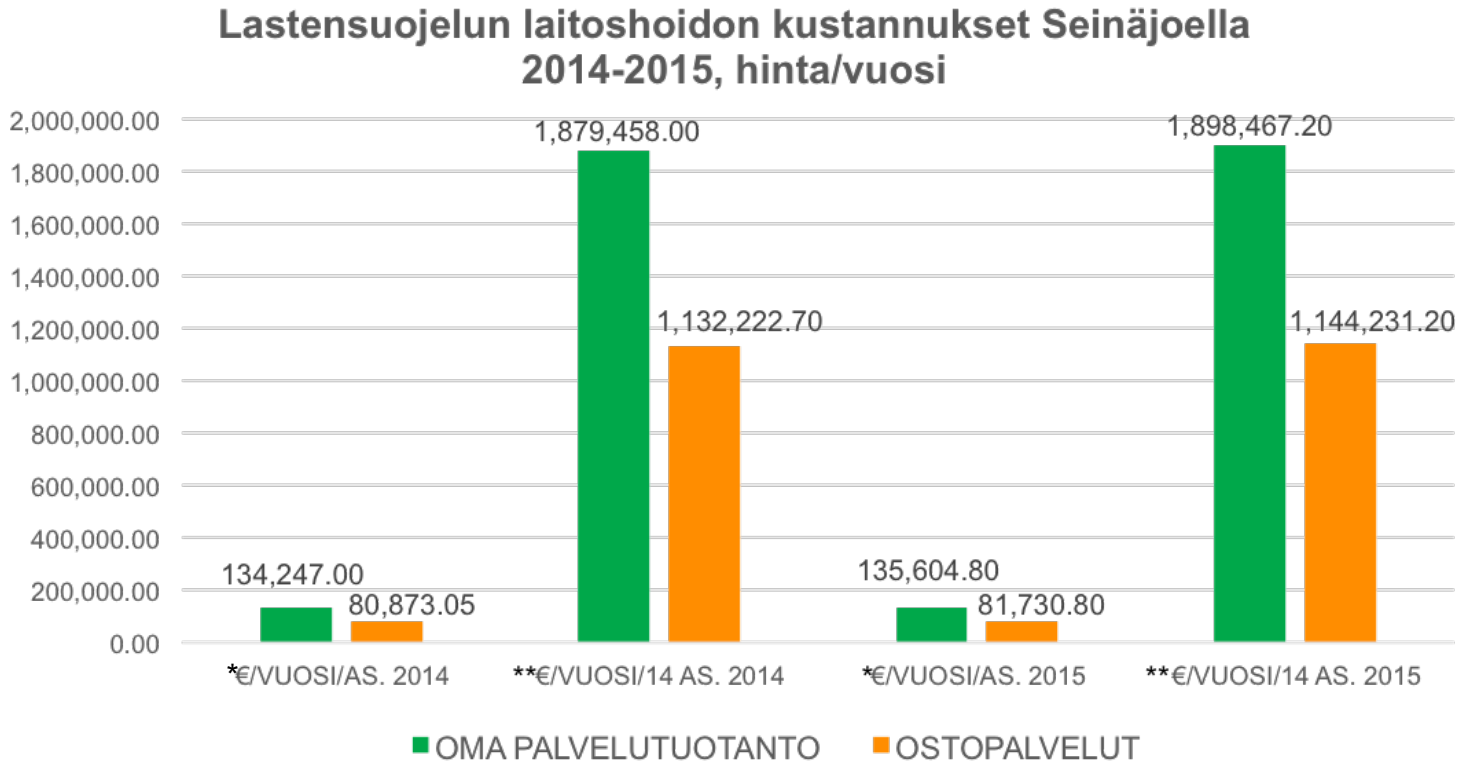
- Per day - € 349 vs. € 286
- Per child per year - € 135 604 vs. € 81 730

The six biggest cities in Finland, own vs. outsourced services 2010-2014



Graafin lähde:
Kuuden suurimman kaupungin lastensuojelun palvelujen ja kustannusten vertailu vuonna 2014, Kuusikko-työryhmän raportti 4/2015.

City of Seinäjoki 2014-2015, own vs. outsourced services



* Toteutuneet hoitokustannukset 2014-2015 €/vuosi
** Laskennalliset 14 asiakkaalle syntyvät kustannukset

Lähteet:
-Talousarvio 2016, Sosiaali- ja terveyskeskus, Seinäjoen kaupunki
-Tasekirja 2014, Seinäjoen kaupunki
-Lastensuojelun laitospalveluiden kilpailutus 2012-2015, Seinäjoen kaupunki

LESSONS TO BE LEARNED FROM THIS EXAMPLE?

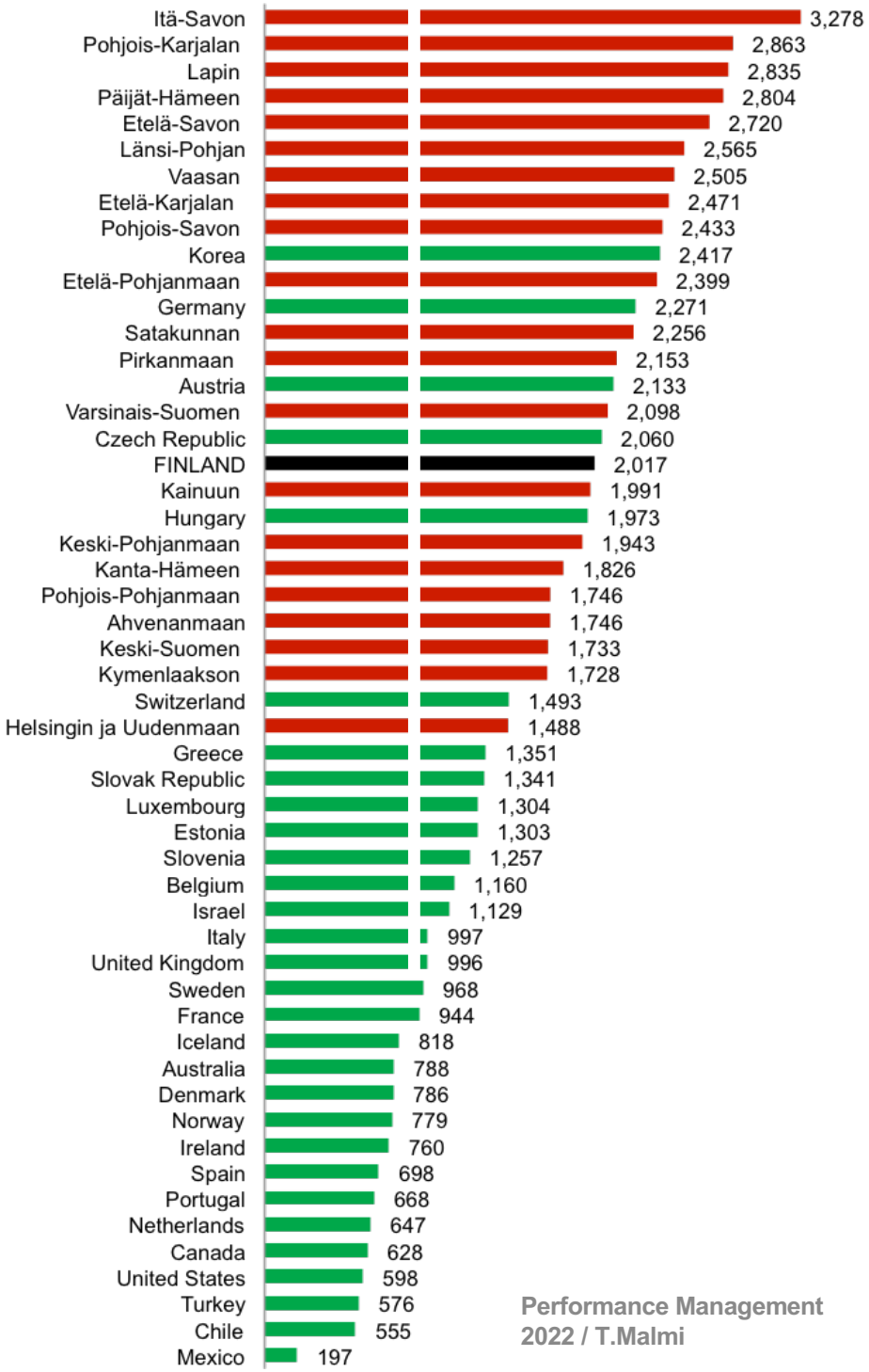
- Price can describe differences in productivity, but one can not judge why differences exist and what to do for those based on it
  - ⇒ You have to measure other aspects as well => seldom one indicator is enough when productivity is assessed
- Previous comparison was between prices and costs, what would be the true difference in productivity?

PRODUCTIVITY

- Important both for business and not-for-profit sector
- In business competition forces firms to improve productivity
- In public sector productivity targets are common
- In many cases rhetoric related to productivity means a desire for savings, but in practice non-business organizations attempt to produce more output with current inputs

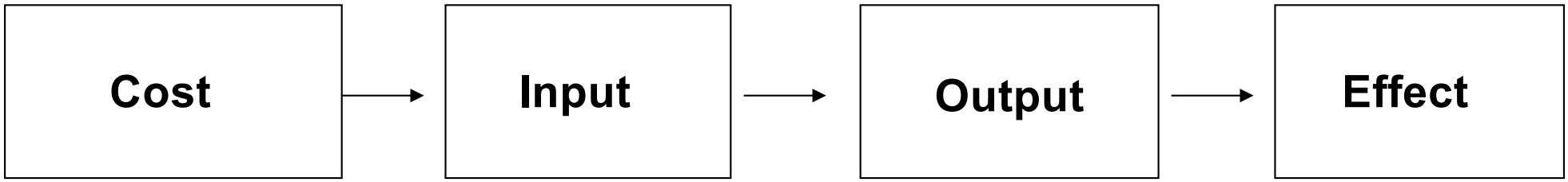
=> what might be the consequence?

Hospital days per 1000 inhabitants in OECD countries and in hospital districts in Finland
OECD Health data 2013 ja THL 2012



White line =
Italy, UK, Sweden and France

SOME CONCEPTS RELATED TO PRODUCTIVITY



Cost efficiency **Productivity** **Effectiveness**

PRODUCTIVITY CAN BE DECOMPOSED IN SOCIAL AND HEALTH CARE

- Production efficiency
  - Activities / treatments are produced efficiently, recall our example above
- Allocation efficiency
  - We perform right treatments
- Social efficiency
  - We provide treatments to right persons

Toimenpiteelliset jaksot / 1 000 as							
Knk-taudit		Hammas ja suusairaudet		iho- ja sukupt.		yhteensä	
KOKO MAA	10	KOKO MAA	2,7	KOKO MAA	3,3	KOKO MAA	135
Keski-Pohjan	29	Kainuun shp	6,9	Itä-Savon shp	10,0	Ahvenanmaa	114
Länsi-Pohjan	16	Länsi-Pohjan	6,3	Päijät-Hämee	7,3	Etelä-Karjalar	135
Pohjois-Karj	15	Lapin shp	6,1	Kanta-Hämee	6,9	Etelä-Pohjanı	132
Pohjois-Pohja	14	Vaasan shp	5,8	Keski-Suome	5,7	Etelä-Savon s	130
Kanta-Hämee	14	Etelä-Pohjanı	4,1	Pirkanmaan s	5,5	HUS	136
Pohjois-Savo	12	Etelä-Karjalar	4,0	Keski-Pohjan	5,2	Itä-Savon shp	180
Kainuun shp	12	Itä-Savon shp	4,0	Pohjois-Pohja	4,7	Kainuun shp	150
Varsinais-Su	11	Kymenlaakso	3,9	Etelä-Savon s	4,7	Kanta-Hämee	143
Etelä-Pohjanı	11	Pohjois-Pohja	3,4	Etelä-Pohjanı	3,4	Keski-Pohjan	140
Itä-Savon shp	11	Pohjois-Savo	3,3	Etelä-Karjalar	3,1	Keski-Suome	119
Pirkanmaan s	10	Satakunnan s	2,8	Pohjois-Karj	3,1	Kymenlaakso	137
Satakunnan s	10	Keski-Suome	2,7	Vaasan shp	2,7	Lapin shp	131
Kymenlaakso	10	Päijät-Hämee	2,6	Lapin shp	2,6	Länsi-Pohjan	174
Lapin shp	10	Pirkanmaan s	2,3	HUS	2,6	Pirkanmaan s	126
Vaasan shp	9	Etelä-Savon s	2,2	Pohjois-Savo	2,2	Pohjois-Karj	133
Etelä-Savon s	9	Pohjois-Karj	2,0	Länsi-Pohjan	1,8	Pohjois-Pohja	152
Keski-Suome	9	Varsinais-Su	2,0	Kainuun shp	0,9	Pohjois-Savo	139
Päijät-Hämee	8	Kanta-Hämee	1,8	Satakunnan s	0,7	Päijät-Hämee	154
HUS	8	Ahvenanmaa	1,7	Kymenlaakso	0,1	Satakunnan s	108
Ahvenanmaa	7	HUS	1,7	Varsinais-Su	0,0	Vaasan shp	137
Etelä-Karjalar	6	Keski-Pohjan	1,3	Ahvenanmaa	0,0	Varsinais-Su	115

Lähde: THL:n poiminta 31.12.2103
Julkaisusta “saadaanko sote-uudistuksella tasalaatua” (KAKS)

”Figures on productivity in the U.S. do not help to improve productivity in the U.S. Measures on productivity are like statistics on accidents: they tell you all about the number of accidents in the home, on the road, and at the work place, but they do not tell you how to reduce the frequency of accidents”

W. Edwards Deming

- Remember that measuring and managing productivity are different things!

FEW QUESTIONS

- Do you agree with Deming?
- In which kind of circumstances productivity measurement is easy? When it is likely to be difficult?
- If the measurement is difficult, should we still try to measure productivity?

WRAP-UP

- Core questions we started with:
  - How do we get others to do what we want them to do?
  - How do we get others to perform well?
  - How do we get employees to do the best for the organization?
- Causes of control problems
- Management control alternatives and their effects
- Financial responsibility centers and various financial indicators of performance, including EVA
- Transfer prices and budgets
- Scorecards – different uses and design implications
- Linking measures to strategy, and between organizational levels

WRAP-UP

- Identify drivers of performance and measure and manage (set targets, create accountabilities) those
- Purposes of incentives, types of rewards
- Design choices (shape of pay function, formula based or not, size of bonus) and criteria for evaluating incentive systems
- Targets – where do they come from, how challenging those should be and subordinate involvement in setting targets

WRAP-UP

- Remedies to myopia problem
- Performance evaluation in the presence of different types of uncontrollable factors and how to deal with those
- Ethical issues related to MCS + ethical frames to judge what is right or wrong
- Todays discussion of contextual impacts such as strategy (especially innovation and ambidextrity), national culture, challenges multinationality bring in as well as MCS and productivity in not-for-profits