



Pmc
People Management Center

**Data technology and HRM:
A framework and some examples**

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TILBURG UNIVERSITY

Understanding Society



**Department of
Human Resource Studies**





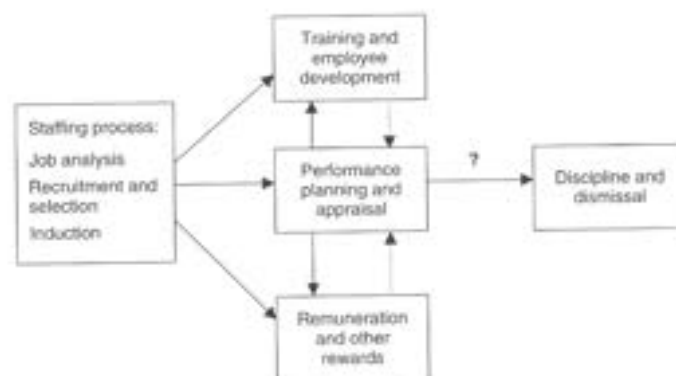
2 Parts to this presentation

- 1
 - What is S(HRM) and what does the new wave of data technology imply for this applied field?
- 2
 - Some examples (of on-going research)

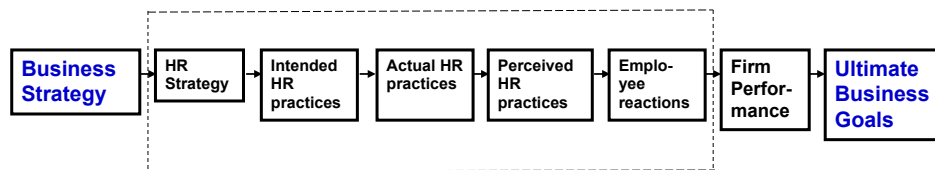
Before we start... what is (strategic) HRM?

- HRM = “the totality of the firm’s management of work and people” (Boxall & Purcell, 2015, p.7)
- HR strategy: “the critical set of economic and socio-political choices that managers make in building and managing a workforce” (B & P, 2015, p. 26)
- Strategic HRM is about integrating HRM with the business in order to achieve organizational goals.
- In a country like NL 1 in 7 of all workers is a manager and 1 in 75 workers is an HR manager
 - > This is likely to be quite similar in Germany, can you help me with the math?

Individual cycle of HRM



Dominant current thinking in S(HRM)



Tilburg University -> Data Science/Big data

... is an *interdisciplinary field* about processes and systems to extract knowledge and insights from data in various forms either structured or unstructured, *which is a continuation of data analysis fields* such as statistics, data mining, and predictive analytics.

... is a *term for data sets* that are so large or complex that traditional data processing applications are inadequate. Challenges include analysis, capture, data curation, search, sharing, storage, transfer, visualization, querying and information policy.

Data technology

Social media x mobile and web-based technologies

...create highly interactive platforms through which *individuals and communities share, co-create, discuss, and modify user-generated content.*

The internet of (robotic) things

... is the network of physical objects –devices, vehicles, buildings, and other items embedded with electronics, software, sensors, actuators and network connectivity- that *enables these objects to collect and exchange data as well as execute local actions.*

Automation of mental work

... is the use of *software agents and artificial intelligence for purposes of data processing, data analysis, and pattern recognition.*

Summary for an applied field like HRM

- Old = established computer and web tech. Deliver/work digitally.
- New = mobile and data tech. Trend towards more (diverse) data, more interconnections between these data, and the use of (automated) data analysis/processing to make sense of them.
- Data science/big data both stimulated by and contributing to data tech.



Hempel (2004) 3 connections technology x HRM

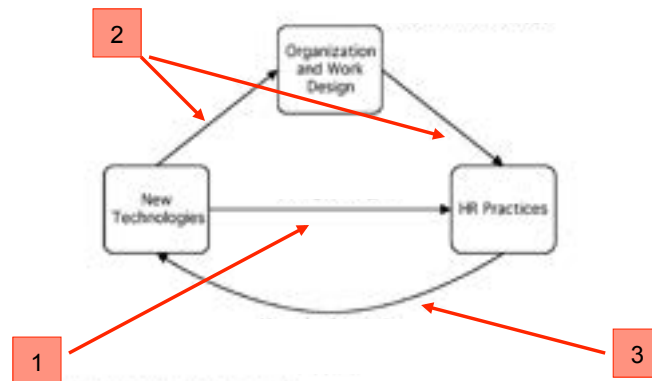


Figure 1. Interactions between Technology and HRM

Data technology x HRM

1. Direct influence of technology on HRM

- old: digital ways of delivering HRM to employees (E-HRM).
- new: digital ways for HRM to contribute to decision making in organizations (HR Analytics/HR intelligence).

2. Indirect influence of technology on HRM through new types of work and organization

- old: teleworking, call centres/shared service centres, virtual teams.
- new: gamification in the workplace, remote work, automated mental work.

3. Influence of HRM on technology

- old/new: HRM for knowledge workers/advanced technology workers.
- old/new: managing technological change in work, organizations, and labor markets.



Examples

Old/direct: The e-future of HRM...

- E-recruitment
- E-learning
- E-benefits
- E-assessment
- E-competencies
- E-satisfaction
- E-development
- E-360 degrees feedback
- E-health
- Employee self-service modules
- Line management self-service modules
- HR portals
- HR shared service centres

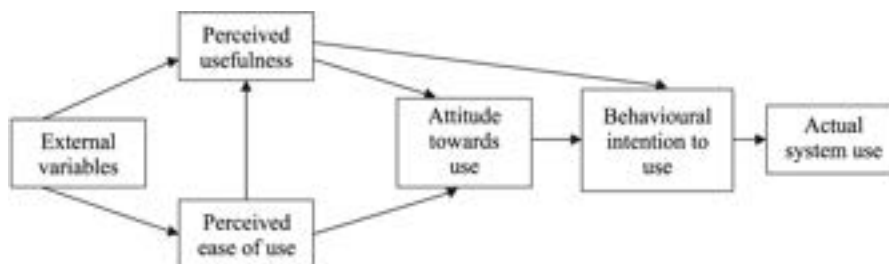




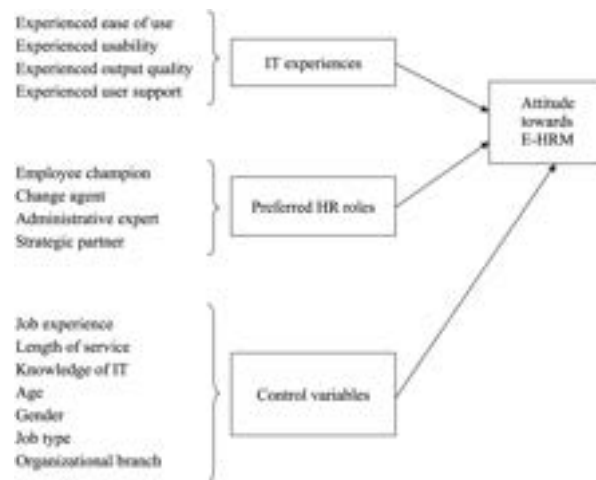
Past research department of HR Studies

- Paauwe, J., Farndale, E., & Williams, R. (2005). Web-Based Organizing in Traditional Brick-and-Mortar Companies: The Impact on HR. *e-Human Resources Management: Managing Knowledge People*, 31-67.
- Voermans, M., & van Veldhoven, M. (2007). Attitude towards E-HRM: an empirical study at Philips. *Personnel Review*, 36(6), 887-902.
- Farndale, E., & Paauwe, J. (2008). Restructuring the HR function: HR shared service centers in The Netherlands. *Technology, Outsourcing, and Transforming HR*, 105-35.
- Farndale, E., Paauwe, J., & Hoeksema, L. (2009). In-sourcing HR: shared service centres in the Netherlands. *The International Journal of Human Resource Management*, 20(3), 544-561.
- Farndale, E., Paauwe, J., & Boselie, P. (2010). An exploratory study of governance in the intra-firm human resources supply chain. *Human Resource Management*, 49(5), 849-868.

Technology Acceptance Model (Davis, 1989)



Technology acceptance interacts with HR preferences



Old/indirect: ICT-facilitated changes in work and organization

- Telework
- Flexible office concepts
- Virtual teams & virtual organizations
- Global software teams
- Call centres & shared service centres
- Employee monitoring
- Impact of automated organizations (ERP) on people



Home days versus office days in teleworkers


Biron, M. & van Veldhoven, M. (in press). When control becomes a liability rather than an asset: Comparing home days and office days among part-time teleworkers. *Journal of Organizational Behavior*.

- N=77 part-time teleworkers working from home at least 1 day/week
- Baseline survey plus diary survey on 3 days worked from home and 3 days worked in the office
- Controlling for baseline, actual hours worked per day
- Office days are more intensive, more stressful, and there is less concentration
- High control of work-time and place actually make days at home more like days in the office; moderate control is better.



New/direct: HR analytics/HR intelligence

- Google comes up with > 30.000.000 hits when using keywords HR Analytics/Workforce analytics/talent analytics.
- HR analytics can be defined as: “the ability to measure how human capital decisions affect the business and how business decisions affect human capital” (Lawler, Levenson, & Boudreau, 2004)


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INSIGHTS FROM INSIDE GOOGLE

WORK RULES!

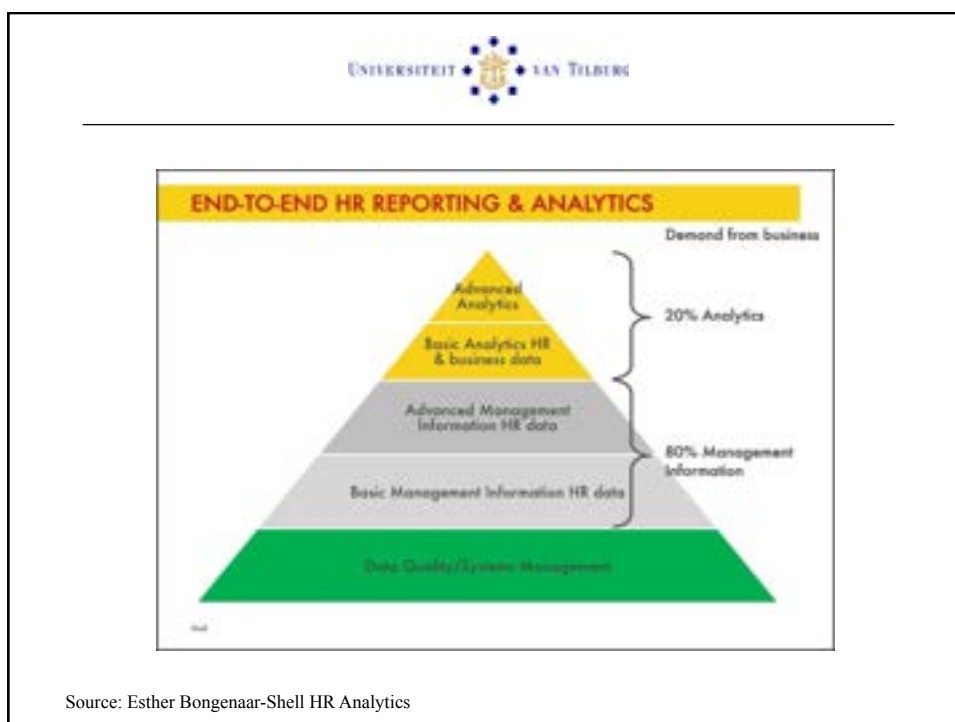
THAT WILL TRANSFORM HOW YOU LIVE AND LEAD

LASZLO BOCK





1/3 of our HR staff globally is hired specifically for their analytical skills. They may have a PhD in statistics or org.psych or a Master's in chemistry or physics. They build an underlying quality in what we are doing by constantly testing our ideas and practices. Analytics measure the impact for everything we do!





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New/indirect: Gamification in the workplace

- Gamification is the application of game-design elements and game principles in non-game contexts.
- In 2015 we participated in the design of a game for employees working in a warehousing context, commissioned by a large logistics firm, co-production with NHTV (logistics/game design).

Effect study 2016-2017

- 1 experimental location, 3 control locations: How does the game affect employee well-being and warehouse performance?
 - Data source 1: game (50 players, game data at individual and team level per order, day, week at experimental site; game includes workplace rating by supervisor and selected team members per shift).
 - Data source 2: business intelligence (performance information at individual (experimental site only), team and location level per order, day, week).
 - Data source 3: individual survey (4x in experimental location; 2x control locations) starting 2 weeks before going "live" and 3 times during "live" period.
- April/May 2016: T0
- Game is being implemented summer 2016 onwards
- T1 and T2 planned for late 2016 and early 2017

A big debate in NL on Robotisation/Platformising



Conclusion -> Some reflections

- Challenges:
How to integrate data from different sources (methods/legal)?
How to develop automated routines for basic analysis/legal issues?
- Possibly massive implications for work, organizations and labor market to be expected. What I've discussed not only touches (HR) managers
- We have hardly completed research on the previous wave of innovation. Thus, "old" research is likely to continue, while "new" research is built over and across "old".
- HR research needs to team up with experts in methods/stats, linguistics and machine learning/AI -> data science