

Er færni í upplýsingatækni mikilvæg fyrir fleiri en tölvunörda?



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Nýting upplýsingatækni

- Grunnhugsun í fræðunum er að hægt sé að:
 - skýra frammistöðu fyrirtækja út frá því hversu vel þeim tekst að nýta upplýsingtæknina (UT) til að efla kjarnafærni þeirra
 - efla upplýsinga- og þekkingarkrefjandi ferla með árangursríkri hagnýtingu upplýsingatækni

(Madhavan & Grover, 1998; McGrath & Insiti 1998, skv tilvitnun í: Nambisan, 2003)

Auðlindasýn

- Nokkrar kenningar leggja til að auðlindasýnin (RBV) gæti verið gagnleg nálgun fyrir rannsóknir á sviði UT
- Fræðin um auðlindasýn skipta upplýsingfærni skipulagsheilda í þrjá megin flokka;
 - tæknilega færni
 - mannlega færni
 - óáþreifanlega færni

(Mata et al., 1995; Tarafdar & Gordon, 2007; Wade & Hulland, 2004)

Mannauðsfærni í UT

- IS-related human resources include the skills of IS professionals, including:
 - technical skills (Bharadwaj, 2000; Mata et al., 1995; Peppard & Ward, 2004; Ross, Beath, & Goodhue, 1996)
 - experimentation and innovation skills (Jarvenpaa & Leidner, 1998; Wade & Hulland, 2004)
 - skills in IT management, communication, and understanding of the business (Copeland & McKenney, 1988; Feeny & Willcocks, 1998; Mata et al., 1995; Wade & Hulland, 2004)

Dæmi um ávinning af UT

- Aukin afköst við úrvinnslu upplýsinga á grundvelli UT
 - tafarlaus tenging möguleg
 - úttak, samsetning og endursamsetning á færni úr mismunandi sviðum til að skapa nýja hæfni og innsýn í gegnum rafræna samþættingu gagna
 - ... þvert í gegnum skipulagsheildina
- Upplýsinga- og samskiptatækni sem
 - styður einstaklinga í skipulagsheildinni til að inna af hendi verkefni og uppfylla þannig skyldur sínar
 - leiðir til árangursríkari samskipta og lausna viðfangsefna
 - leiðir til mun herra stigs samþættingar en mögulegt væri af öðrum kosti

(Boynton, 1993; Lei, A., & Goldhar, 1996; Olivera et al., 2008; Parnas, 1972; Stock & Tatikonda, 2008; Venkatraman, 1994; Zhang, 2005)

(Croteau & Raymond, 2004; Nambisan, 2003)

Vinnuferlar og stjórnkipulag

- Fyrri rannsóknir hafa sýnt fram á að upplýsingatæknin
 - stuðlar að bættum árangri skipulagsheilda og getur þar með flokkast með hæfni þeirra
- Áhrifin á frammistöðu fyrirtækja mótast af því að beita réttu upplýsingatækninni innan réttu viðskiptaferla er háð
 - viðeigandi venjum og stjórnkipulagi sem tekur mið af samkeppnisumhverfinu

(Bhatt, 2010; Brynjolfsson & Hitt, 1996; Devaraj & Kohli, 2003; Dong, Xu, & Zhu, 2009; Ray et al., 2005)

(Burton & Obel, 2003; Melville et al., 2004)

Tæknileg UT færni

- Technical resources including
 - physical IT assets, such as databases, software, hardware, network and applications
 - firm-specific proprietary technology and applications
- They provide a platform on which information systems are built and tools for transferring, storing and retrieving information

(Armstrong & Sambamurthy, 1999; Bharadwaj, 2000; Broadbent, Weill, & Neo, 1999; Keen, 1993)

(Mata et al., 1995)

Óáþreifanlegar UT færni/eignir

- Intangible IS assets include
 - vendor relationships (Powell & DentMicallef, 1997)
 - a customer orientation
 - flexible IS culture and knowledge assets (Bharadwaj, 2000)
 - partnership between IT and business units and end user
 - top management relationships (Ross et al., 1996)

(Bassellier & Benbasat, 2004)

Inngreypt í skipulagsheildina

- IS competency is created when processes and structures are applied in non-transparent and inimitable ways to develop specific abilities for accomplishing IS-related organizational tasks
- IS competencies are therefore embedded in organizational processes and business routines (Teece, 2000)

Félagslega tæknilegt kerfi

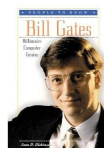
- The STS perspective considers the organizations as a social subsystem that have access to the information, using tools, techniques, and knowledge, to produce input that is valuable for the firm
- Both of these views (web of computing and STS) emphasise the importance of aligning all the factors in such a way that they contribute to the overall objective of the firm
- It is therefore not sufficient to have the appropriate technique, but furthermore to have processes and system that contribute to an effective use of the technique (e.g. information systems)

Shani, Grant, Krishnan, & Thompson's (1992)

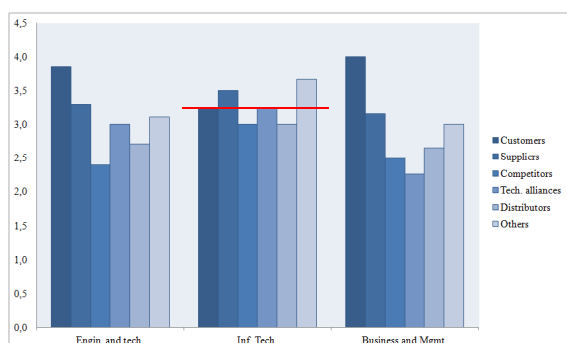
Tölvunörd

- *Stereotypical nerd qualities have evolved in recent years, going from awkwardness and social ostracism to an allegedly more widespread acceptance and sometimes even celebration of their abilities*
- *This is largely attributable to the rise of the [computer industry](#), which has allowed many "nerdy" people (most notably [Bill Gates](#)) to accumulate large fortunes and other measures of social prestige*
- *Some measure of nerdiness is allegedly considered desirable, as, to some, it suggests a person who is intelligent, respectful, interesting, and able to earn a large salary*

Heimild: Wikipedia



Tengsl tölvumanna við umhverfið



Vefur upplýsingatækni

- In a seminal article, Kling and Scacchi (1982) introduced a model they refer to as 'web of computing' that provides a framework for understanding the impact of information technology on business processes
- They argue that managers who use a web model are
 - *“more likely to see a technical change (or new policy) as*
 - *embedded in a larger system of activity,*
 - *as having consequences which depend on peoples' actual behaviour, and*
 - *as taking place in a social world in which the history of related changes may influence the new change”*

(Kling & Scacchi, 1982, p.4)

Nörd

- **Nerd** is a term that refers to an intelligent but single-minded person obsessed with a nonsocial hobby or pursuit
- Nerds are generally considered to be awkward, shy and/or unattractive by most
- Thus, a nerd is often excluded from physical activity and considered a [loner](#) by others, or will tend to associate with a small group of like-minded people

Heimild: Wikipedia

- Snara.is: *“ákafur áhugamaður”*

Ímynd unglina á tölvunördum

- they are teenage males
- they part their hair in the middle and/or wear their hair "slicked" down
- they wear eyeglasses
- they wear pocket protectors containing mechanical lead pencil
- they dress in trousers that don't meet the shoe top (i.e., "high waters")
- they wear oversized clothing
- they have thin bodies
- they possess pale complexions from spending too much time indoors and having no time for outdoor recreation



Barba, Robertta H. and Mason, Cheryl L.
Journal of Research on Computing in Education, Spring 94, Vol. 26 Issue 3

Færni í upplýsingatækni

- The IT capability literature rooted in the RBV argues that various IT related resources combine to form an IT capability that is valuable, rare, nonimitable and nonsubstitutable (Mata et al., 1995)
- Bharadwaj (2000) defines IT capability as “the ability to mobilize and deploy IT-based resources in combination or co present with other resources and capabilities” (p. 173).

UT nýtingarfærni

- Pavlou et.al (2006) developed an IT capability construct specifically for New Product Development (NPD) processes and focused on leveraging capabilities of the NPD work units as business users (or clients).
- They defined this capability as IT leveraging competence in NPD which relates to the ability of NPD work units to effectively use IT functionalities to support IT-enabled NPD activities.



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Helstu áhrif UT á árangur

dæmi um vöruþróun

- Support information processing through enhanced communication and increased efficiency of information sharing (Burton & Obel, 2003)
- Enhance the efficiency, scope, and flexibility of New Product Development (NPD) capabilities (Pavlou & El Sawy, 2006)
- Facilitate the efficiency of NPD capabilities by facilitating rapid and reliable knowledge sharing (Alavi & Leidner, 2001)
- Increase the scope of NPD capabilities by increasing knowledge reach and richness (Sambamurthy et al., 2003)
- Enhance the flexibility of NPD capabilities by enhancing the accessibility and availability of knowledge (Zahra & George, 2002)



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Eðli stjórnunarlegrar upplýsingtæknifærni

- The ability of managers to understand and appreciate the business needs of other functional managers, suppliers and customers
- The ability to work with these functional managers, suppliers and customers to develop appropriate IT applications
- The ability to coordinate IT activities in ways that support other functional managers, suppliers and customers
- The ability to appreciate the future IT needs of functional managers, suppliers and customers.



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Mæling á stjórnunarlegri upplýsingtæknifærni

To what extent does information technology department(s)* in your firm:

- Understand business opportunities
- Are aware of firm's competitive priorities
- Understand business policies and objectives
- Solve business problems
- Initiate change in the firm

*) Information technology department(s) is defined as „a functional group(s) within a business that manage the development and operations of the business's information systems, including the development of software applications“.

Bhatt and Grover, 2005



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Þekkja, skilja og nýta UT

- IT leveraging competence in NPD thus describes the ability of NPD work units to be:
 - aware of what IT functionalities have to offer
 - to understand when to use them if they may be useful, and (when they decide to use them)
 - to do so effectively by taking advantage of their specific IT functionalities

(Pavlou & El Sawy, 2006: p. 204)



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Stjórnunarleg upplýsingtæknifærni

- The capability of firms to utilize IT for enhancing the firm's sustainable competitive advantage, including innovativeness, has been referred to as managerial IT skills (Mata et al., 1995)
- Managerial IT skills are proposed to enhance market orientation and the advantage of network relationships by accelerating the efficiency by which information is acquired from the environment.



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Stjórnunarleg upplýsingtæknifærni



Line manager
stjórnandi



IT manager

Segir til um ... hversu vel stjórnendur í UT:

- a) skilja þarfir fyrirtækisins
- b) vinna með og treysta stjórnendum (line managers)

Það mætti bæta við:

- c) Hversu vel stjórnendur skilja "raunhæfa" möguleika í nýtingu UT til að bæta ferla og samkeppnishæfni
- d) og hversu færir þeir eru í að nýta sér hana

→ hversu vel þessir aðilar vinna saman



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Mæling á stjórnunarlegri upplýsingtæknifærni

To what extent does information technology department(s)* in your firm:

- Appreciate line management's* contribution in setting IT strategy
- Trust line Management in setting IT goals for the firm
- Respect line management in setting IT strategy for the firm
- Periodically consult line management in setting strategic roles of IT in the firm
- Share responsibilities with line management in the firm
- Share accountability with line management in the firm

*) Line management was defined as „a person who heads revenue generating departments (manufacturing and selling) and is responsible for achieving the organization's main objectives by executing functions such as, policy making, target setting, and decision making“.



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