

Social and organizational implications of mobile & wireless technologies

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M&W Technologies & Society

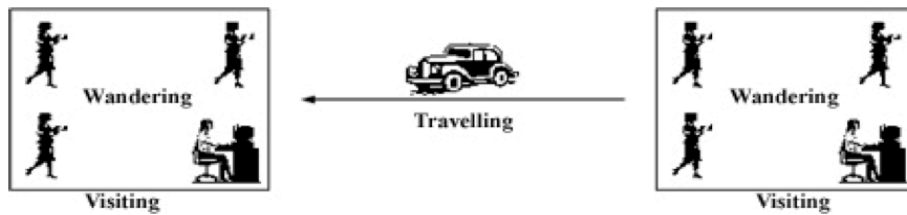


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Credit: BBC online

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Mobility - traditional view



Kristoffersen and Ljungberg, 2000

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Mobility = humans' interactivity?

- 3 dimensions of human interactions: spatial, temporal and contextual mobility

Kakihara, M. Emerging work practices of ICT-enabled mobile professionals, unpublished PhD thesis, 2003

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Shrinking of space

- time-space convergence:
 - increased inter-relationships between people and places in time-space
- time-space distancing:
 - increased “remote control” of things and people over time-space.
 - people who are absent in time and space may now have as much influence on things going on in a locality, as those who are present in time-space
- time-space compression:
 - the speeding up of both of the above.

Giddens, A. (1984). *The Constitution of Society: Outline of the Theory of Structure*. Berkeley, U of CA Press
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M&W Technologies (1988)

**PRICE AND TECHNOLOGY BREAKTHROUGH!
LIGHTWEIGHT HANDHELD CELLULAR PHONE**
Carry It Along With You to Make or Take Calls Wherever You Go!
Keep in Touch When You're Out of Your Office, Home or Car

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- The Most Affordable Portable Available Anywhere
- Fits in Your Briefcase—Only 11" Wide
- Weighs Only 28 Ounces, Including Batteries
- Includes Built-in Rechargeable Battery Pack, Antenna, Carrying Case and Strap

Radio Shack CT-300. All the convenience of a full-feature cellular phone in a truly portable case! You can easily carry it with you anywhere you go and use it just as you would a regular push-button phone. But you can use it anytime when you would normally be out of contact. At the push of a button, you can be in touch on a boat. You're always accessible in an immediate response if necessary and you can manage your time more efficiently. You can use your portable phone in and around the over 100 cities in the USA that now have hand-held cellular service, with more cities on the way.

No larger than a cordless telephone, the CT-300 gives you all that. Memory for accurate speed-dialing of up to 40 phone numbers. High-energy batteries that deliver up to 10 hours standby or 1 1/2 hours of talk time on charge, and that can be recharged in only 60 minutes. Camouflage dial-pad display so you can easily keep track of the amount of time your phone has been in use. And an electronic "lock" that records phone use and is easily reprogrammable through the keypad. Other features include a low-battery warning tone, and indicators for "No Service," "In Use" and "Power." Has 600-milliwatt power output.

We make the CT-300 easy to own with leasing and credit plans, in-store processing of all start-up paperwork and programming of the phone. You walk out with a working cellular telephone! Backed by our one-year limited warranty, it's your best buy by far. Requires charging stand and AC adapter or mobile mounting kit. **1499.00**

Accessories for the CT-300

Charging Stand. Recharges battery pack in one hour! Permits operation with charging batteries. Requires AC adapter or mobile mounting kit. **17.40**

AC Adapter. UL listed. **17.95**

Extra Rechargeable Nickel-Cadmium Battery Pack. Cuts out 1 amp-hour. **17.60**

Handset/Data Interface. Enjoy two-way hands-free conversations. Full duplex. Also serves as interface for laptop computers. **17.60**

Mobile Mounting Kit. Use the CT-300 in your car as a mobile cellular phone! Our Mobile Mounting Kit allows installation of Charging Stand #17402 (extra) in a vehicle. You can make and take calls while in driving and from work, stuck in traffic or taking the bus to practice. Quick-release design allows easy dismount of charging stand from the mobile mounting kit. Includes DC power cord and mounting hardware. **17.40**

Make Last-Minute Calls
Communicate at Job Sites
Even Use on Your Boat

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Social shaping on M&W



- M&W technologies and social groups as being inherently independent of one another optimization of both technical and social elements for the effective use

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- What have been your biggest sources for frustration regarding the communications needs in the area?
- Concerning user acceptance, what are the social or cultural aspects that need to be addressed?

Study: The making of “Revolution”

- Turn-based history game (for mobile phones) based on the events of 1776
- Design, production, programming, art and audio working in dispersed settings using M&W technologies for collaboration
- Collaboration through play-testing (mobile professionals)

Brown, A. D., Stacey, P., and Nandhakumar, J. Making sense of sensemaking narratives, *Human Relations*, 61 (8), pp. 1035-1062, 2008.

The midway through the project....

- Major squabbling over the design:
- Jnr. Programmer realized the “executable file size was too big for the base configuration” he had in mind;
- this was put down to the art assets being too rich and therefore too large.
- there was a great deal of discrepancies between their accounts too

Discrepant sensemaking

- Development challenges (eg ambiguous designs specs) triggered distributed sensemaking
- Collective sense and cohesion were difficult to attain (manly challenges involved art work issues – and distributed context)
- Lacked shared understanding between art, design and programming
- Discrepant sensemaking and lack of collective action led to a political rift in the context

Sensemaking

- A processes of interpretation and meaning production whereby individuals and groups interpret and reflect on phenomena (Weick et al 2005)
- Through sensemaking people enact (create) the social world, constituting it through verbal descriptions which are communicated to and negotiated with others.

- M&WC in distributed context triggered distributed sensemaking of challenges
- activities such as play-testing and other related interactions might bring people together to achieve 'consonance' in their sensemaking should be promoted

Study: virtual working of mobile professionals - a large petrochemical company

- Two projects:
 - members of the knowledge management group who were also the early adopters of virtual teamworking; and
 - managers from a large construction project, who were seen as the 'champions' of virtual teamworking.

Baskerville, R., and Nandhakumar, J., Activating Long-Term Virtual Teams: Now That We're Mobile, Where Do We Go?, *IEEE Transactions on Professional Communication*, 50 (1), pp. 17-34, 2007.

“We have been in with somebody [VT meeting] quite senior for 15 minutes, it just costs them 15 minutes of time but it has brought a level of authority and significance to our workshop, which we couldn't otherwise have had.”

KM team manager

“We had a ...flange that failed under pressure testing, traditionally that [a problem] would have meant people flying up to the sitebut we found that by showing people those pictures [using video conferencing], you could get to resolve problems a lot quicker.....”

construction manager

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Extending authority relationships

- Remote participation of senior managers in junior managers' regular meetings
 - gave high visibility and significance
 - junior members drew on senior managers' authority to legitimize decisions taken in such meetings
- senior managers extended their authority over subordinates through online interactions
 - e.g. making their presence more visible in remote sites
 - team members found it more difficult to contradict senior managers' idea when video conferencing was used to communicate with them.

Still sought to establish personalized relationships

“we are having a global team meeting in two weeks time the big joke is – ‘can’t you do this virtually?’- I say no we can’t do it virtually, we can get so far virtually but until we have a real good drink and a good meal and a good social chat at length we are not going to be a ‘real team’.”

KM team member

VT was insufficient

not providing emotional satisfaction

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Baskerville, R., and Nandhakumar, J., Activating Long-Term Virtual Teams: Now That We're Mobile, Where Do We Go?,
IEEE Transactions on Professional Communication, 50 (1), pp. 17-34, 2007.

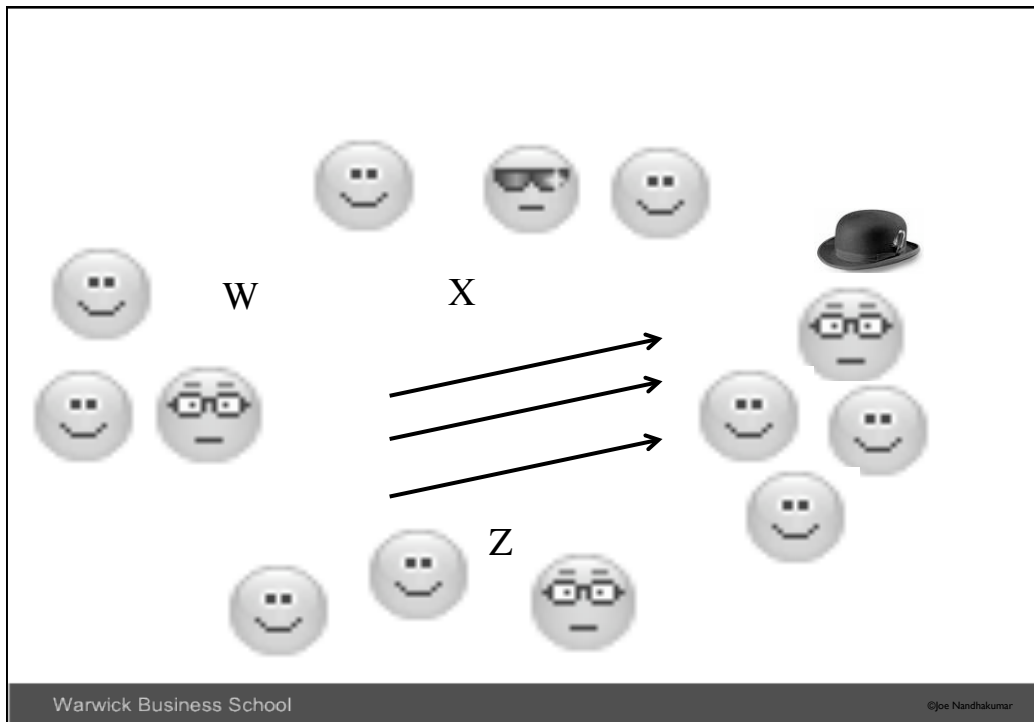
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Trust based on people for durable M&WCs

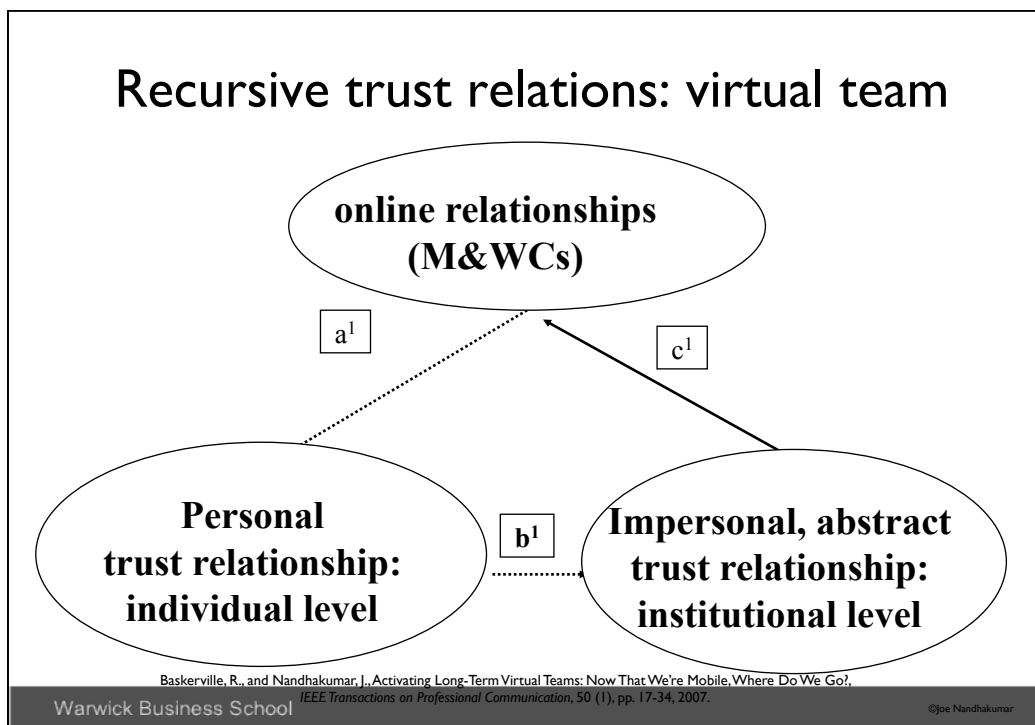
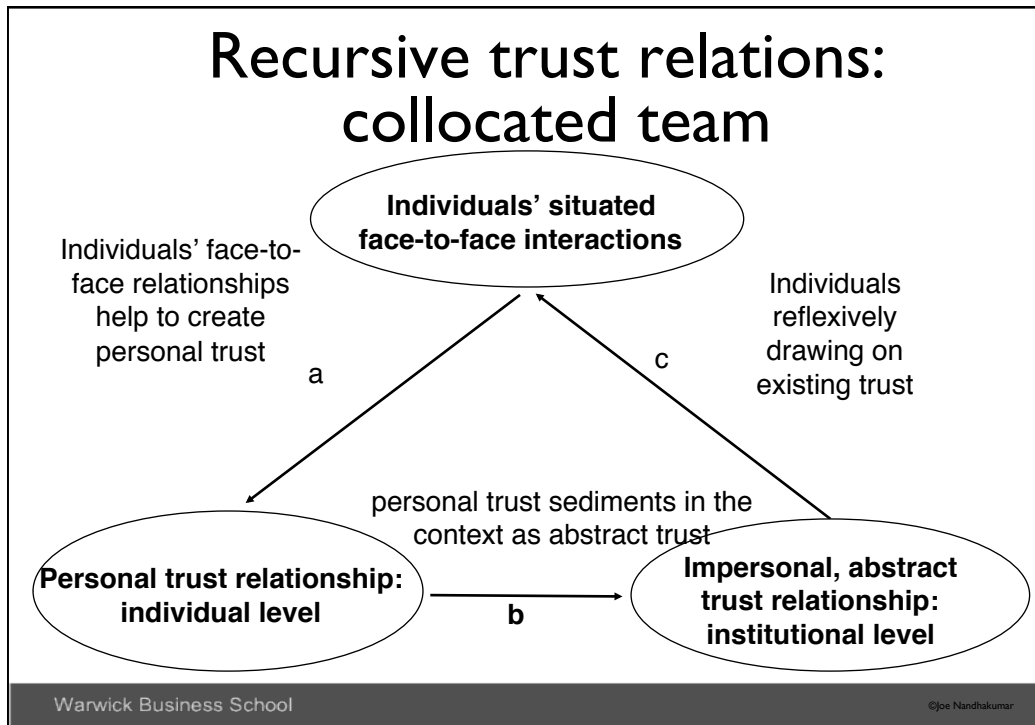
- trust based on abstract systems was not providing emotional satisfaction (but enabled temporary teamworking)
- they sought to establish trust relationships through face-to-face encounters
- personalized trust was essential for **durable** M&WCs.

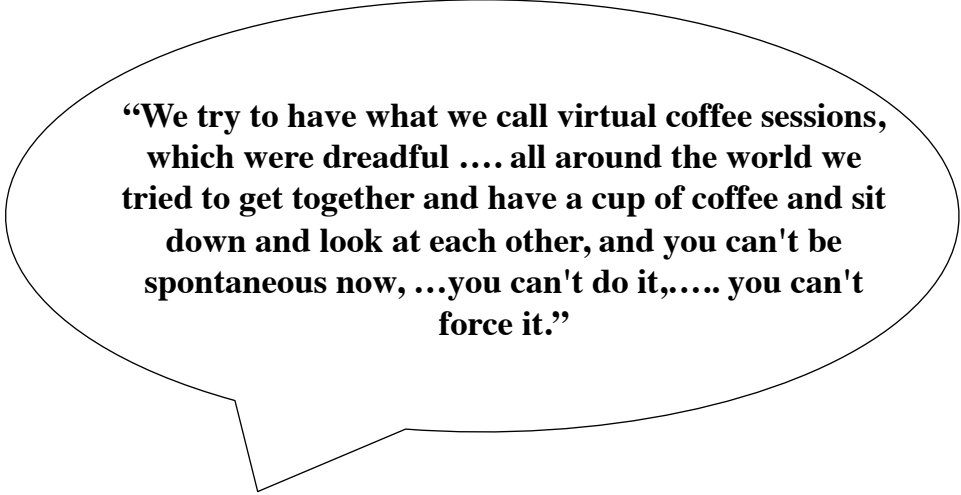
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- “In my team some people [are] based in [town x], some people based in [town y] and then odd ones kind of all over..... slowly people started to migrate to the biggest center for the meetings. It was classic ... instead of going to my base office which was in [town x], I would go to [town y] because I knew the boss was going to be there for a start, but then there was the deep scare that if the [VTPC] broke down I will be where the action is ... I'm not going to be left out.”





“We try to have what we call virtual coffee sessions, which were dreadful all around the world we tried to get together and have a cup of coffee and sit down and look at each other, and you can't be spontaneous now, ...you can't do it,..... you can't force it.”

KM team member

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Development and reinforcement of trust relations

- organizational members draw on the abstract systems in their virtual teamworking practices which indirectly helped to reproduce trust in the abstract systems
- personal trust needs to be actively built and also needs to be continuously renewed through shared experiences
 - e.g socialization & participation in 'backstage' activities where the exchange of feelings and emotions take place.
- use of virtual team technologies is unable to contribute to reproduction and reinforcement of such interpersonal trust relationships.

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Future?

“Image”

“Virtual conferencing in 'Second Life' breaks down a few of the traditional barriers”

Future internet (eg IBM)

- New media strategy centers on the possibilities for virtual world (like second life – expletory)
- “Running global meetings in virtual world at a fraction of the cost” – IBM
SCM features, Volume 11, Issue 3 April/May 200
- Promote activities & interactions that might bring people together to achieve ‘consonance’ in their sensemaking
- Develop personalized trust which is essential for **durable** M&WCs.

“The networked information economy offers an opportunity to change the way we create and exchange information, knowledge, and culture”

- By doing so, we can make the 21st century one that offers individuals greater autonomy, political communities greater democracy, & societies greater opportunities for cultural self-reflection & human connection.
- We can remove some of the transactional barriers to material opportunity, and improve the state of human development everywhere.
- Perhaps these changes will be the foundation of a true transformation toward more liberal and egalitarian societies.

Yochai Benkler (2007) *The Wealth of Networks: How Social Production Transforms Markets and Freedom*
<http://www.congo-education.net/wealth-of-networks/>