Meaning Processing
The next wave?

VTT

3 February 2006

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meaningprocessing.com

Agenda

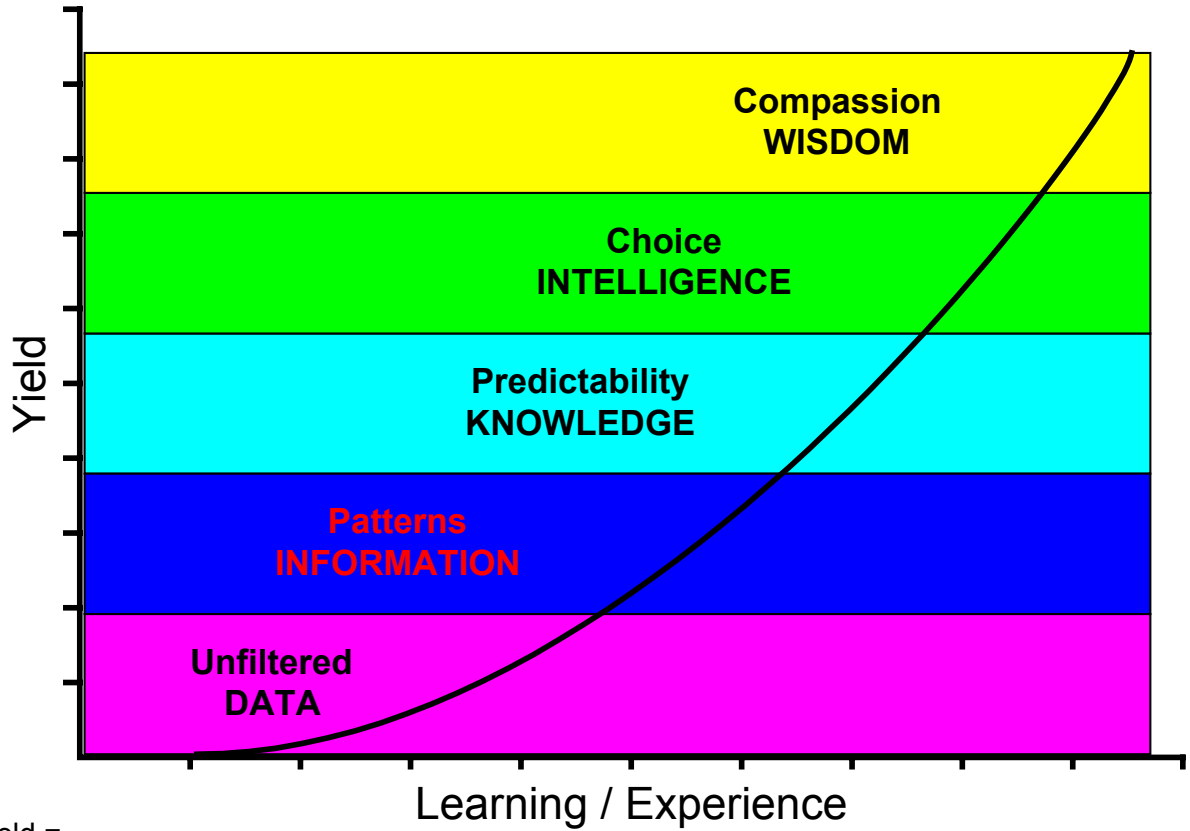
- What went wrong with the Information Processing paradigm
  - and how do we repair the damage?
- Information processing vs. meaning processing
  - different ways to conceptualize knowledge, organization and society
  - implications for information systems design
- Examples of rapidly growing Internet applications (with a heavy meaning processing component)
- Some conclusions

The conventional "hierarchy of knowledge"

- Davenport & Prusak, 1998:
  - Data are simple "discrete, objective facts about events"
  - Information emerges as meaning is added to data
  - Knowledge is "something more than data or information, something broader, deeper, and richer"; "knowledge is valuable information"
- Earl, 1994:
  - Organizational events are represented, collected and processed to generate data
  - Data are further manipulated, presented and interpreted to generate information
  - Information then leads to knowledge, as it is tested, validated and codified
- Wiig 1993:
  - Information consists of facts and data that are organized to describe a particular situation or condition
  - Knowledge consists of truths and beliefs, perspectives and concepts, judgments and expectations, methodologies and know-how

What is knowledge?

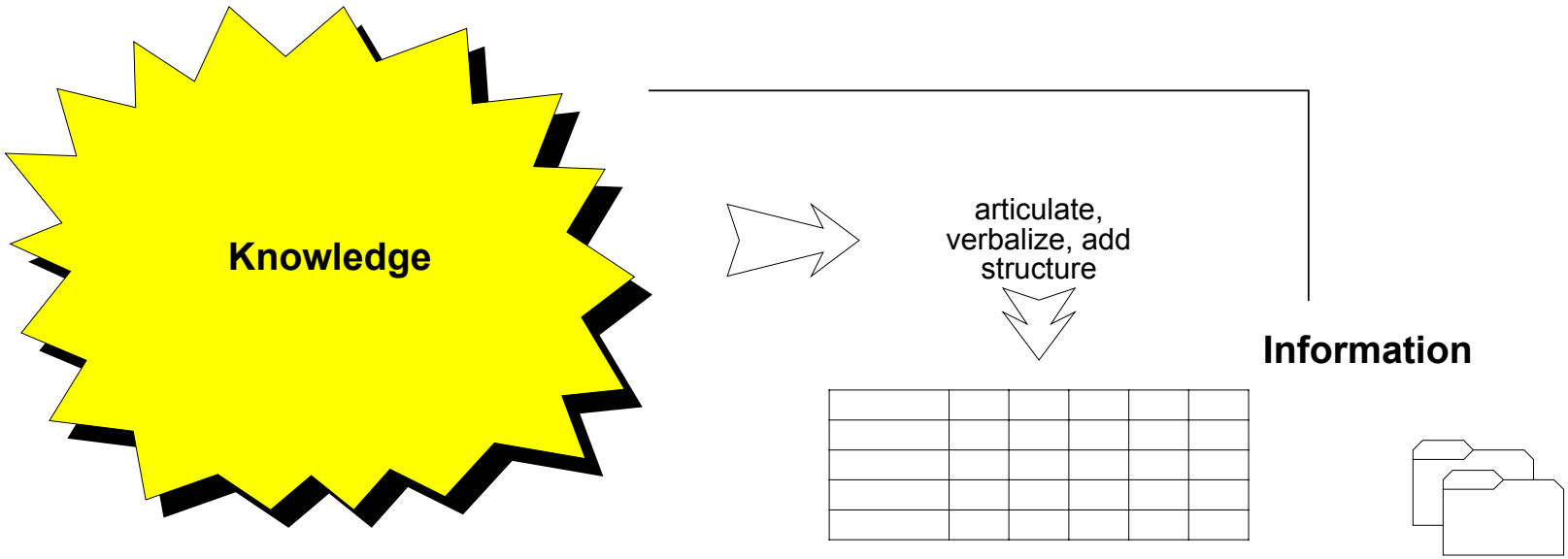
- This is how we usually think it is:



Yield =
intellectual dividens per effort invested

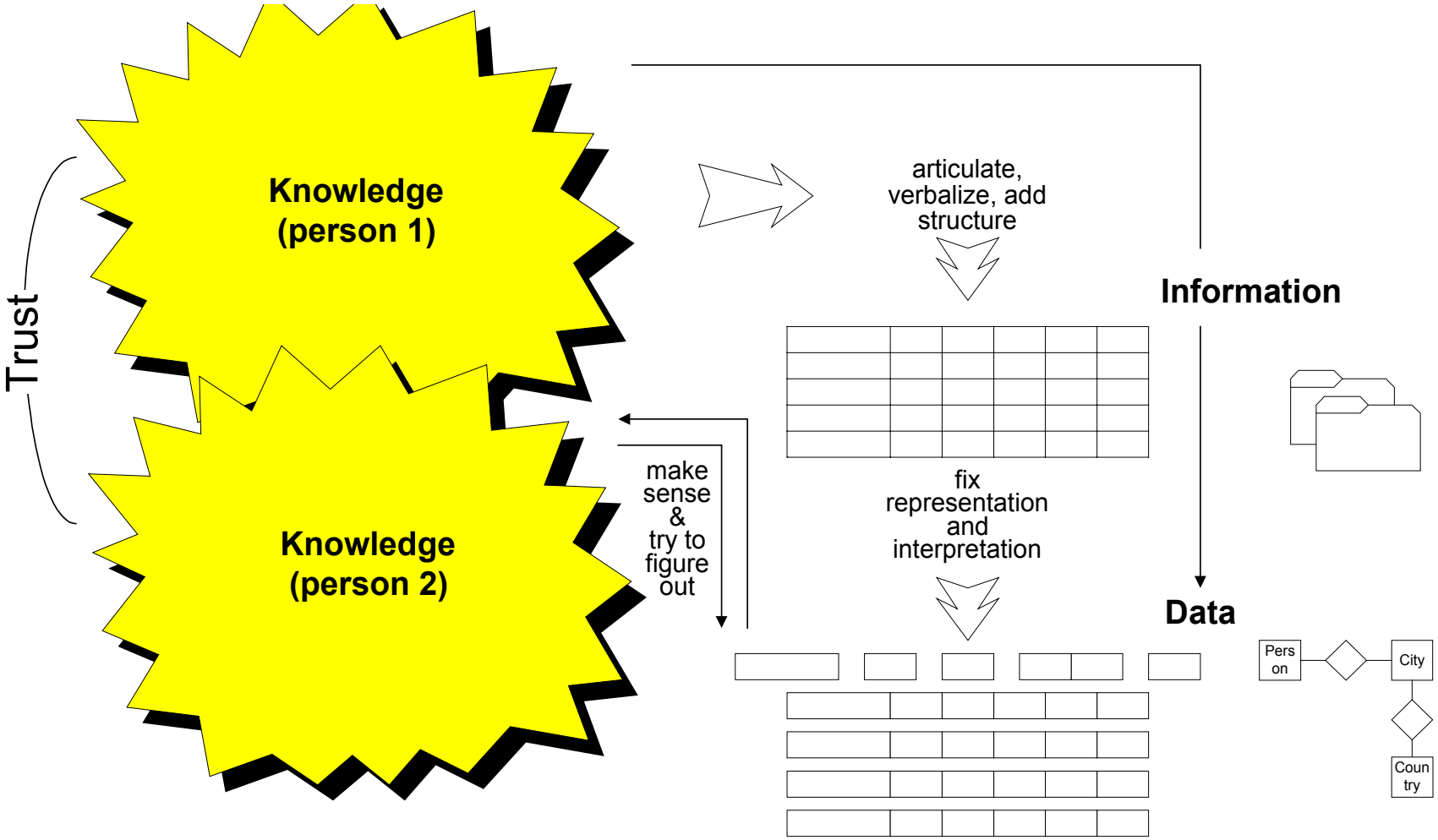
source: G. Pór

Data is more than knowledge



I. Tuomi: Data is more than knowledge: implications of the reversed knowledge hierarchy to knowledge management and organizational memory. *Journal of Management Information Systems* 6 (3):103-117, 2000.

Interpretation requires shared knowledge



Can information lead to meaning?

"Insofar as information in this dispensation can deal with meaning it is in the dictionary sense only: accessing stored lexical information according to coded address.

There are other 'meaning-like' operations such as permuting a set of entries in order to test the resultants against a criterion, as in anagrams or Scribble. But information processing cannot deal with anything beyond well-defined and arbitrary entries that can enter into specific relationships that are strictly governed by a program of elementary operations.

…Information processing needs advance planning and precise rules. It precludes such ill-formed questions as 'How is the world organized in the mind of a Muslim fundamentalist?' or 'How does the concept of Self differ in Homeric Greece and in the postindustrial world?'" (Bruner, 1990:5)

The social foundation of knowing and knowledge creation

- M. Bakhtin (1930's): linguistic "genres" and "chronotype"
- L. Fleck (1935): "thought communities"
- D. Schön (1983): "communities of reflective practitioners"
- E. Constant (1980, 1984, 1987): "communities of practice"
- Y. Engeström (1987): "activity systems"
- Lave & Wenger (1991): "communities of practice"
- Brown & Duguid (1991, 2000): "communities of practice," "networks of practice"

Knowledge is practice-related and activity-oriented

•articulated in a social process,
•learned through socialization,
•reflected in the conceptual systems that are used in interpreting the world,
•partially embedded in material and technical artifacts,
•and often not explicitly articulated

The meaning of things depend…

Two epistemological models

	Information Processing	**Meaning Processing**
Nature of knowledge	Positivist, empirist, objectivist	Constructivist
Knowing subject	Individual cognitive processors of mental knowledge representations	Cultural and historical actors who participate in social processes of knowing, sensemaking and intelligent action
Concept of information	Structured facts about observer-independent reality	Socially and culturally interpreted and articulated signals and communications

Two organizational models

	Information Processing	**Meaning Processing**
Nature of Organization	Organizations as information processing structures	Organizations as intelligent actors and knowledge-creators
Strategy	Hierarchical decision-making; strategic long-term planning	Distributed organizational learning; competence development and utilization directed and led by shared vision, narrative, and interpretation culture; strategic management of cross-boundary knowledge; innovation and communication networks
Information systems	Decision-support systems (DSS), Executive Support and Information Systems (EIS/ESS), Data Mining Systems, Enterprise Information Architectures (EIA)	Computer-Mediated Communication Systems (CMC), Collaboration Systems (CSCW), Cognitive Augmentation and Knowledge Construction Systems, Business Intelligence Systems (BIS), Organizational Memory Systems (OMIS)

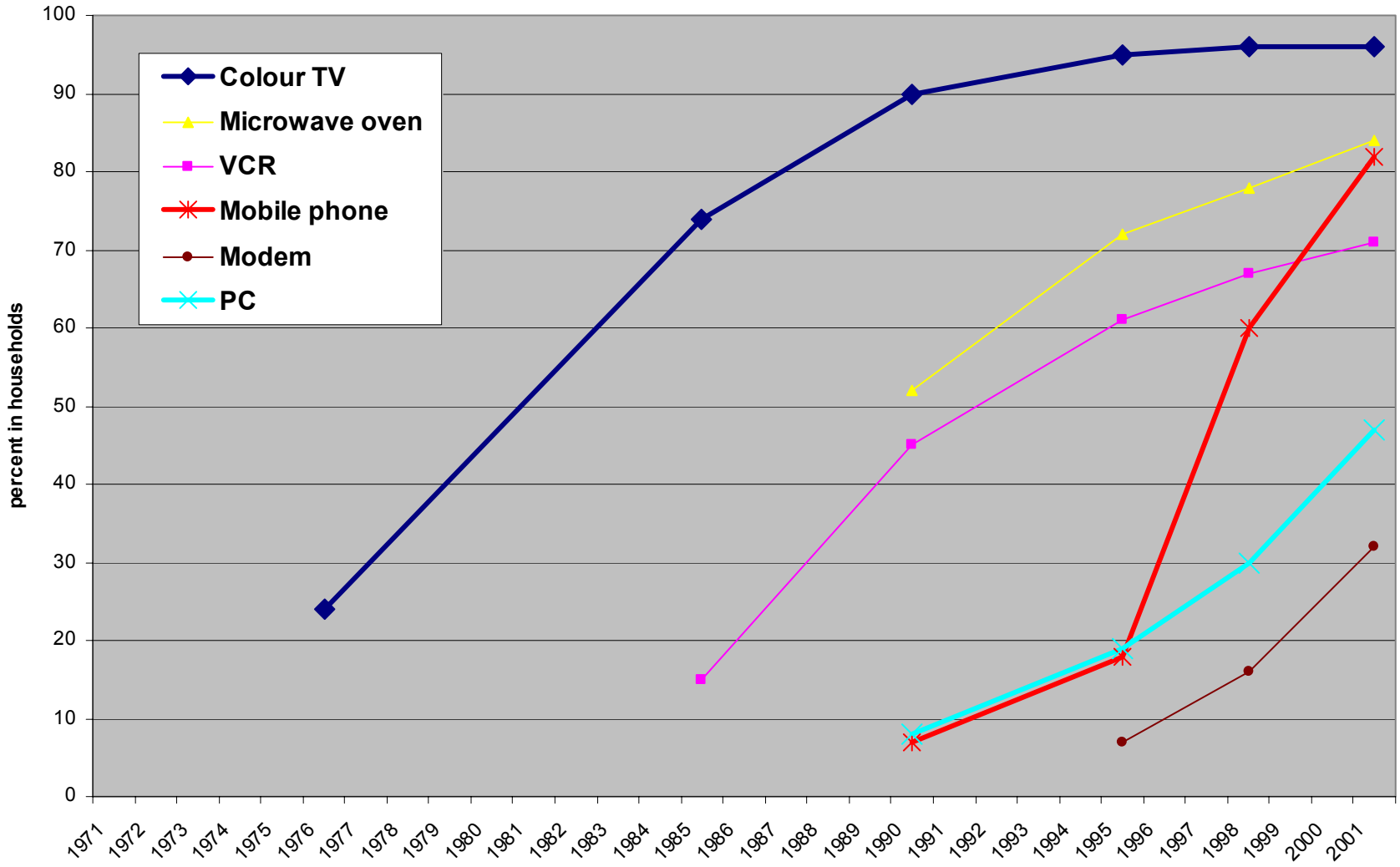
Two socio-economic models

	Information Processing	**Meaning Processing**
Nature of society	Neoclassical economy with scarce resources	Institutional and sociological system of expanding space of meaning and economic interactions
Consumer	Individuals expressing their self-interest, needs, and preferences	Consumption as production of socially meaningful interactions and progress
Sphere of production	Profit-maximizing individual and organizational actors	Symbiotic and co-evolving user-producer ecologies
Sphere of economic interactions	Universal market	Diversified value and knowledge communities that act as carriers of social practice

"Because everything in her home is waterproof, the housewife of 2000 can do her daily cleaning with a hose."

"Miracles You'll See In The Next Fifty Years," Popular Mechanics, 1950

Social Drivers of Technological Change



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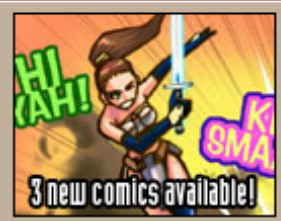

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now with Dark Conquest

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Lineage is a subscription game requiring an active Internet connection. Subscription details can be found here.

Questions about the website? Contact us.

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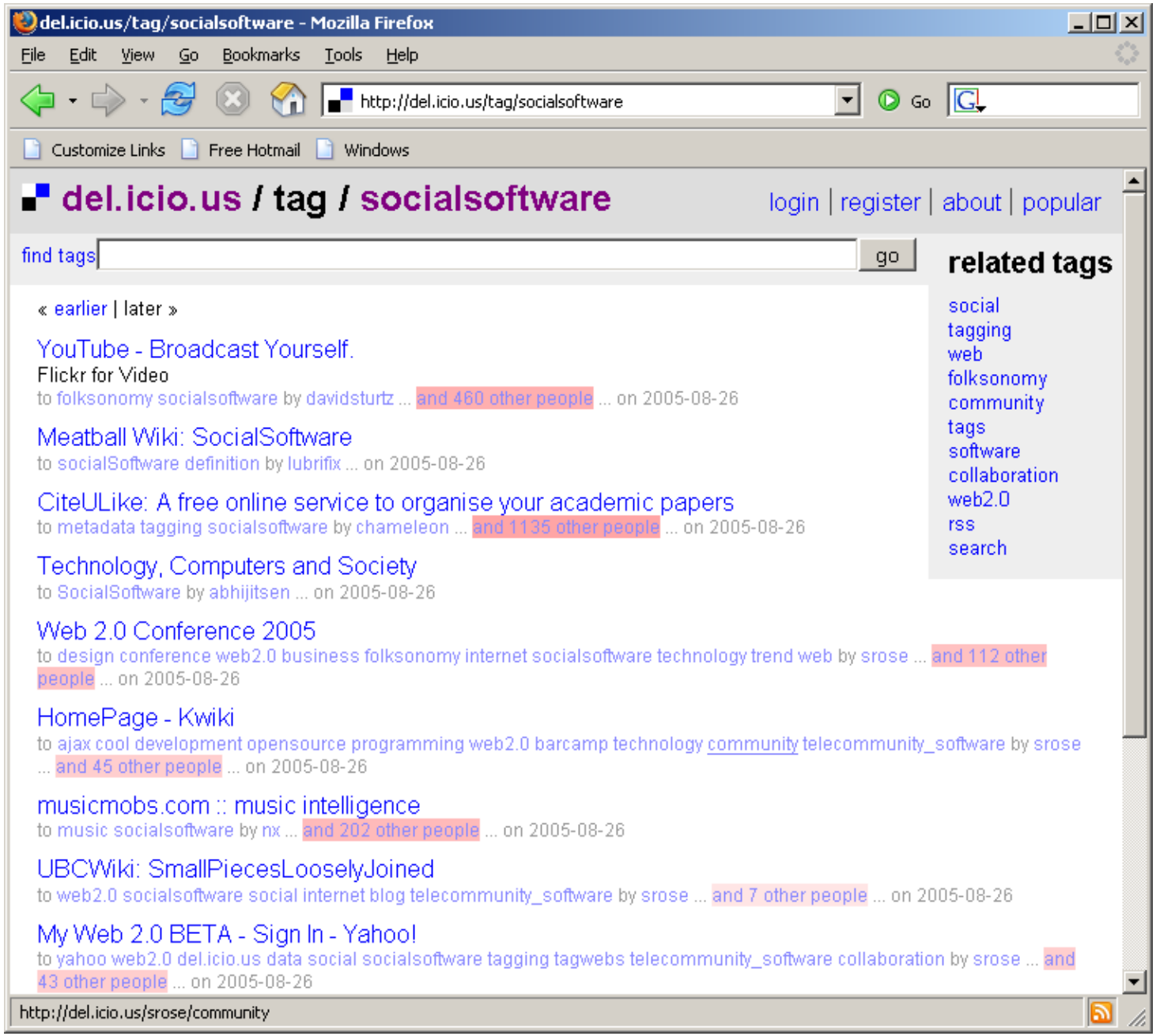
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From MAKE 04: Music and Kits for the Holidays, Page 7

Crafter Manifesto

by Ulla-Maaria Mutanen

The magic of making things.

Ulla-Maaria Mutanen, a Ph.D. student at the University of Helsinki in Finland, has been thinking about why we enjoy making things. Creator of the HobbyPringcess blog, she developed a Crafter's Manifesto that could just as easily be read as a call for makers to unite. We present it here as our holiday greeting to celebrate the universal urge to do it yourself.

- People get satisfaction for being able to create/craft things because they can see themselves in the objects they make. This is not possible in purchased products.
- The things that people have made themselves have magic powers. They have hidden meanings that other people can't see.
- The things people make they usually want to keep and update. Crafting is not against consumption. It is against throwing things away.
- People seek recognition for the things they have made. Primarily it comes from their friends and family. This manifests as an economy of gifts.
- People who believe they are producing genuinely cool things seek broader exposure for their products. This creates opportunities for alternative publishing channels.
- Work inspires work. Seeing what other people have made generates new ideas and designs.
- Essential for crafting are tools, which are accessible, portable, and easy to learn.
- Materials become important. Knowledge of what they are made of and where to get them becomes essential.

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Kat

"You got a problem with that, niggabitch?! ;-)"

Female
26 years old
Antwerp,
Belgium

Last Login: 9/13/2005

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Kat's Interests

Music	Satyricon, Emperor, Enslaved, Dissection, Darkthrone, Immortal, Morbid, Mayhem, Katatonia, Venom, st. Vitus, Slayer, Turbonegro, Boris, Alabama Thunderpussy, Sunn 0)), Sigur Ros, Der Blutharsch, Burzum, rnb, hiphop, foute feesjesmuziek, ...
Movies	The Evil Dead, Lock Stock and Two Smoking Barrels, Donnie Darko, United States Of Leland, Zatoichi, Sin City, Snatch, Reservoir Dogs, Pulp Fiction, Seven, The Godfather

Kat is in your extended network

Kat's Latest Blog Entry [Subscribe to this Blog]

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Kat's Blurbs

About me:
I'm nasty, naughty, but nice... sometimes

Who I'd like to meet:
Jake Gyllenhaal

Kat's Friend Space

Kat has 47 friends.

Raf aka Famooze

Marco

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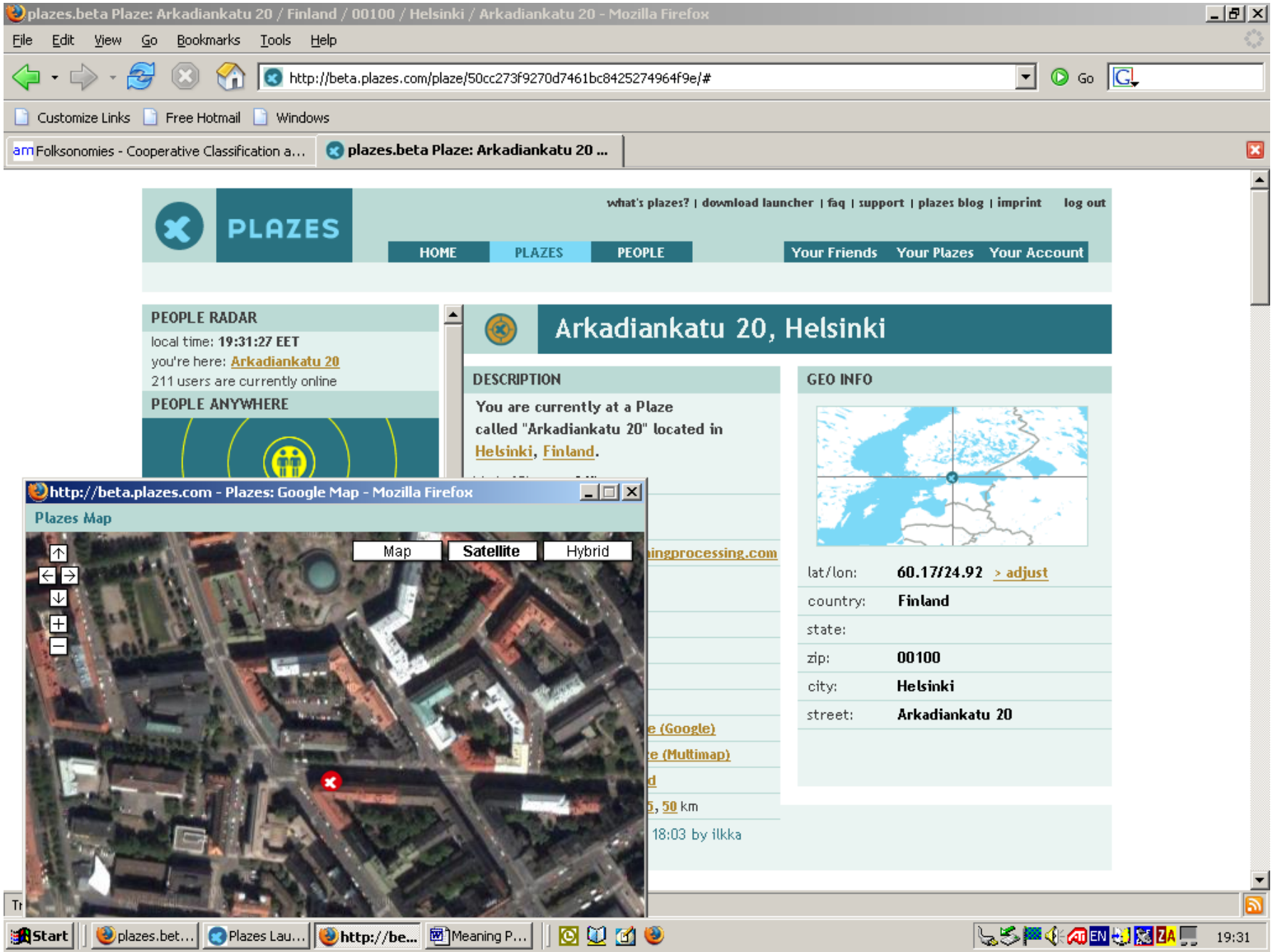
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Conclusion...

- Social and cultural knowledge is becoming important for ICT design
  - this is **heavy theory**, not just a ”cultural layer of paint over the real thing”
- Brute force information processing **is** able to solve some practical meaning processing problems, as bits and processing cycles are becoming massively available at null cost
  - But ”Semantic Web” will fail: it uses a dead-end epistemological model

- Information processing was closely associated with specific practical problems (noise in deterministic computations, industrial age economy and society, semiconductor scaling, ...), now the problems are different.
- My bet:
  - The next Information Technology paradigm is Meaning Processing.

Kiitos
Thank You
Muchas Gracias
!

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