Busserne kører igen

200.000 buspassagerer har været berørt af de to dages busstrejke.

Snow, buses,

and mobile
data services

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Official rhetoric on ICT development in Denmark

- Denmark has been visibly successful in development of ICT infrastructure and promotion of the diffusion of ICT in all spheres of social and economic activity

- When assessed by the overall ability of individuals in a country to access and use ICT, taking into account five variables: infrastructure, affordability, knowledge, quality, and usage, Denmark tops the list.

Danish ICT in numbers

- 83% of Danish population has access to Internet either from work or home
- 32% have broadband access, up from 7% in 2001
- 95% have mobile phones
- 70% of all phones are data-enabled (GPRS, EDGE, UMTS), up from 3% in 2003
- MMS sent doubles every 6 months - 8 mil sent in 2.H.2004, up from 0.5 mil in 1.H.2003
- GPRS up/down-load doubles every 6 months - 7,5 TB in 2.H.2005, up from 0 MB in 1.H.2002

Critique for the official rhetoric

- On the backdrop of the official rhetoric, there is a growing criticism that:

  1. the provision of advanced data services to the citizens is often driven by political rationale

  2. focus in developing service infrastructure is almost always on the producers of ICT systems and services, but not on the citizens or end-users

  3. all rankings exclusively focus on the supply of services, and fail to look at the demand side of services

- The growth of mobile data traffic is suspiciously proportional to the growth of MMS traffic

A closer look at mobile services in Denmark

MMS
1%

GPRS
2%

SMS
22%

?

Voice
75%
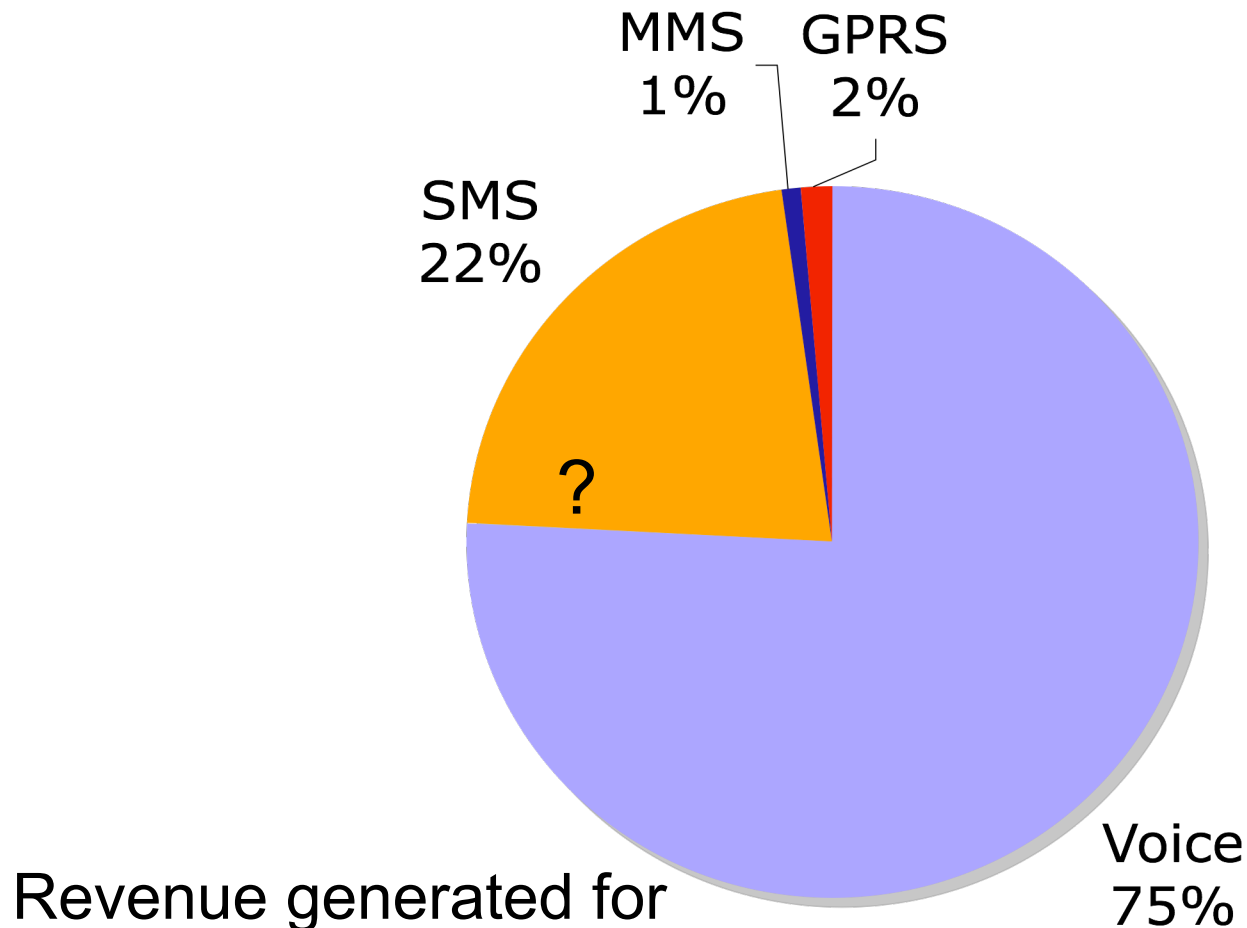
Revenue generated for
mobile operators

Research problem

- The lack of proper measurement methods is substantiated by two dilemmas:

  1. The question of how to reconcile the political rhetoric of information society development to the use of specific technologies remains largely unanswered.

  2. In studies of social behavior of citizens with regard to their use of ICT, reliance on indirect questionnaire methods of measuring behavior is inadequate - the behavior and its interactive elements should be directly observed *in situ* .

Research questions

- The actual degree to which the infrastructure and the services are used by citizens is at the focal point of this study.

- The question we are posing is this: "to what extent people are using advanced data services permitted by the ICT infrastructure in situation when the use of such services can be perceived as important?"

- Specifically, we are examining situation when the contextual constraints, that otherwise embody dominant meanings of adequate behavior, have changed, resulting in decrease of meaning and the need to reconstruct it by using available communication channels

Theoretical approach

- We conceptualize the Information Society as the "structure", defined by three dimensions.

- To make sense of the observed behavior, theory of organizational behavior is used.

- We take the social learning approach to organizational behavior studies, which focus on reciprocal interaction between behavior, cognitive processes and the environment

Citizen

Social behavior

Environment
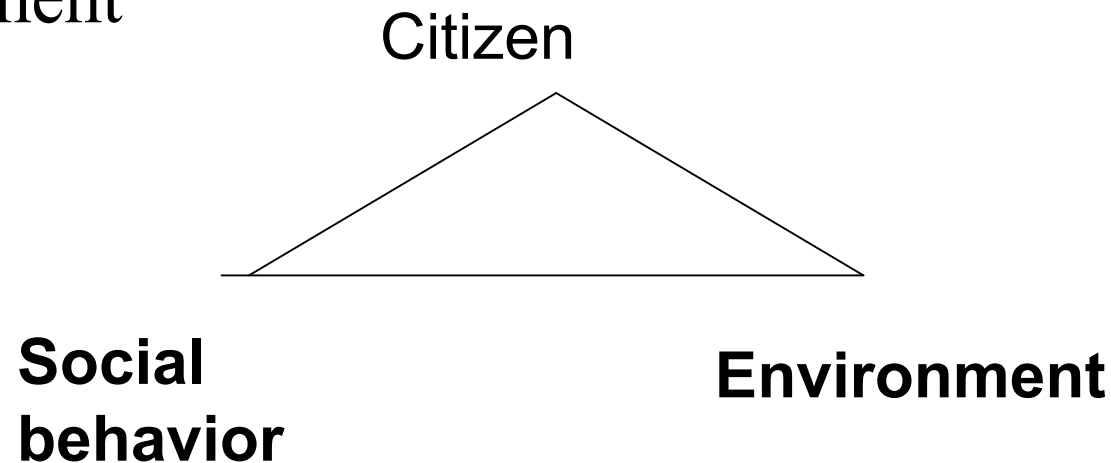
Snow, buses, and mobile data

Research method:

•In situ observation +

• Own experience as an advanced user +

• Hypothesis =

• Case study +

• Survey

• 0.5 mil passengers daily

• 300+ bus lines

• A number of media to provide data services

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HUR service provision

Priority	Channel	Push/ Pull	VAS?
1	Radio news broadcast	Push	Free
2	TV Text	Pull	Free
3	TV news broadcast	Push	Free
4	Call center automatic voice response	Pull	Free
5	HUR web page	Pull	Free
6	HUR information boards in the downtown	Push	Free
7	SMS automatic response	Pull	VAS
8	WAP	Pull	VAS

In situ observations

1. People are patient:

    - "temporary group in the early stages of its history" +

    - the lack of communication among the group members =

    - vulnerability to disruptions in the environment

2. People use their mobile phones to tell their are late:

    - in cases when organizational structures are disrupted, people re-create meaning by communicating with others.

    - using mobile phone as a communication channel to seek meaning from outside the immediate setting appeared to be the part of "structure" passengers had in mind
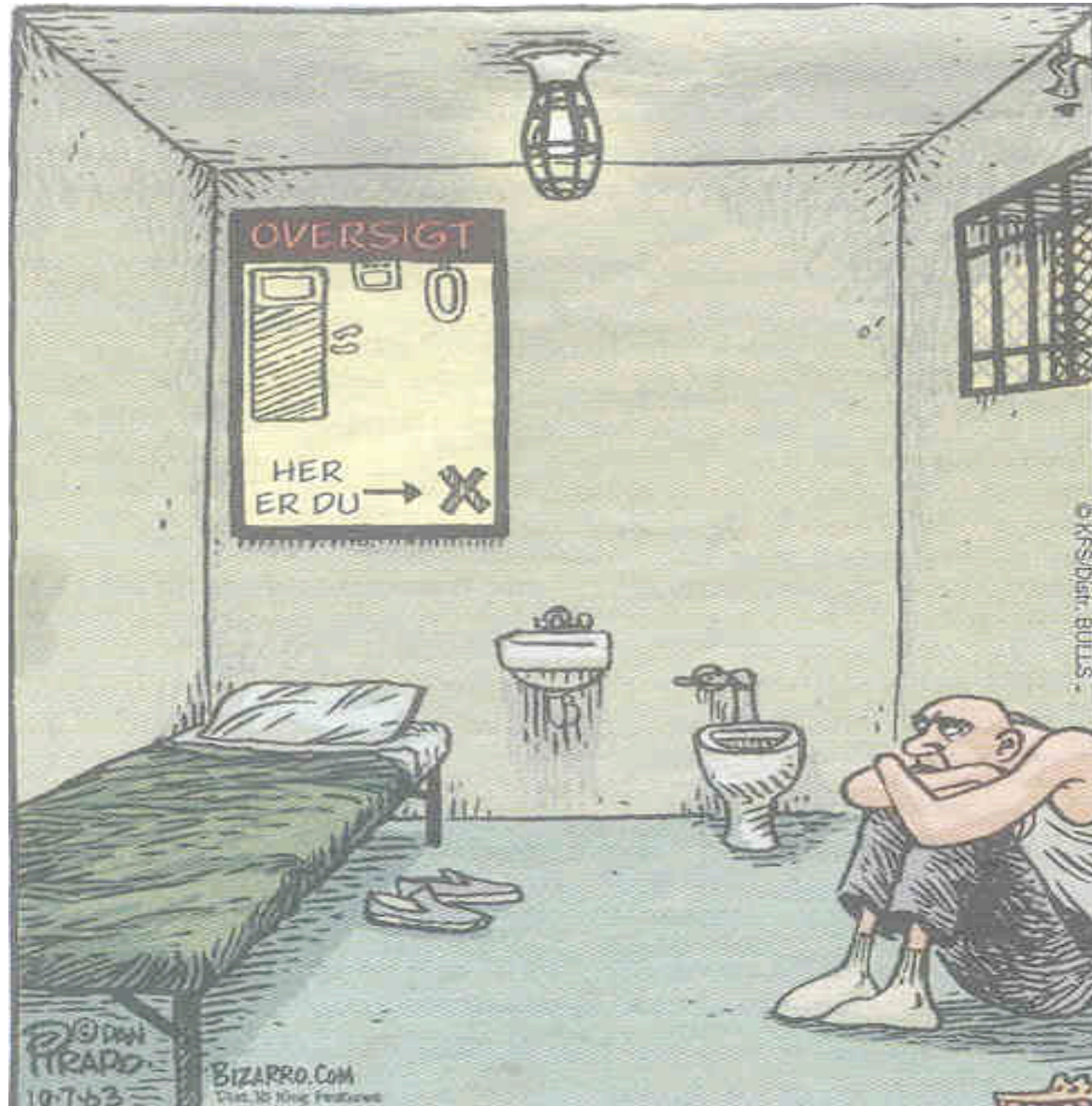
3. People just walk away:

    - when people are unable to negotiate strangeness through meaning-seeking interaction, have their frameworks and meanings destroyed rather than construct each other, and seek escape by physical means.
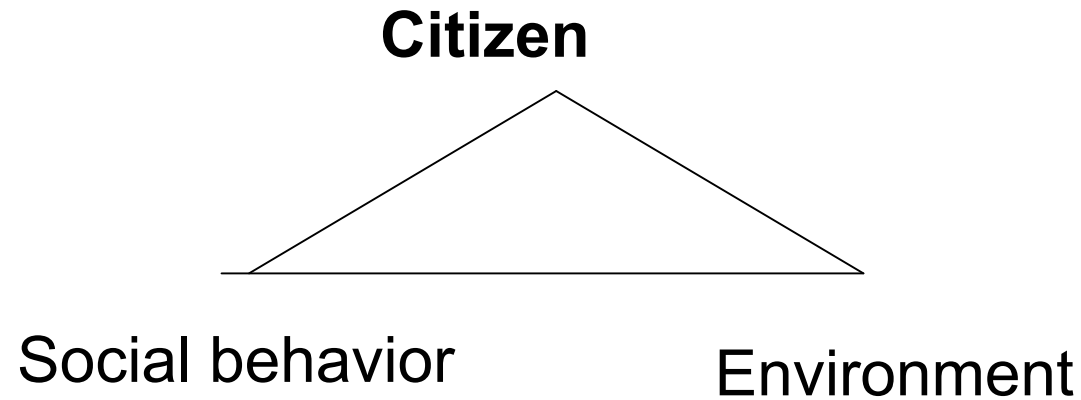
Case study findings:
media channel statistics for traffic information access

	# of calls	# of visitors to WWW	# of requests via WAP	# of SMS requests
Jan'06	70.220	14.251	3.949	1.221
Feb'06	48.728	12.664	2.895	1.294

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Why citizens do not use available mobile data services?

Citizen

Social behavior   Environment

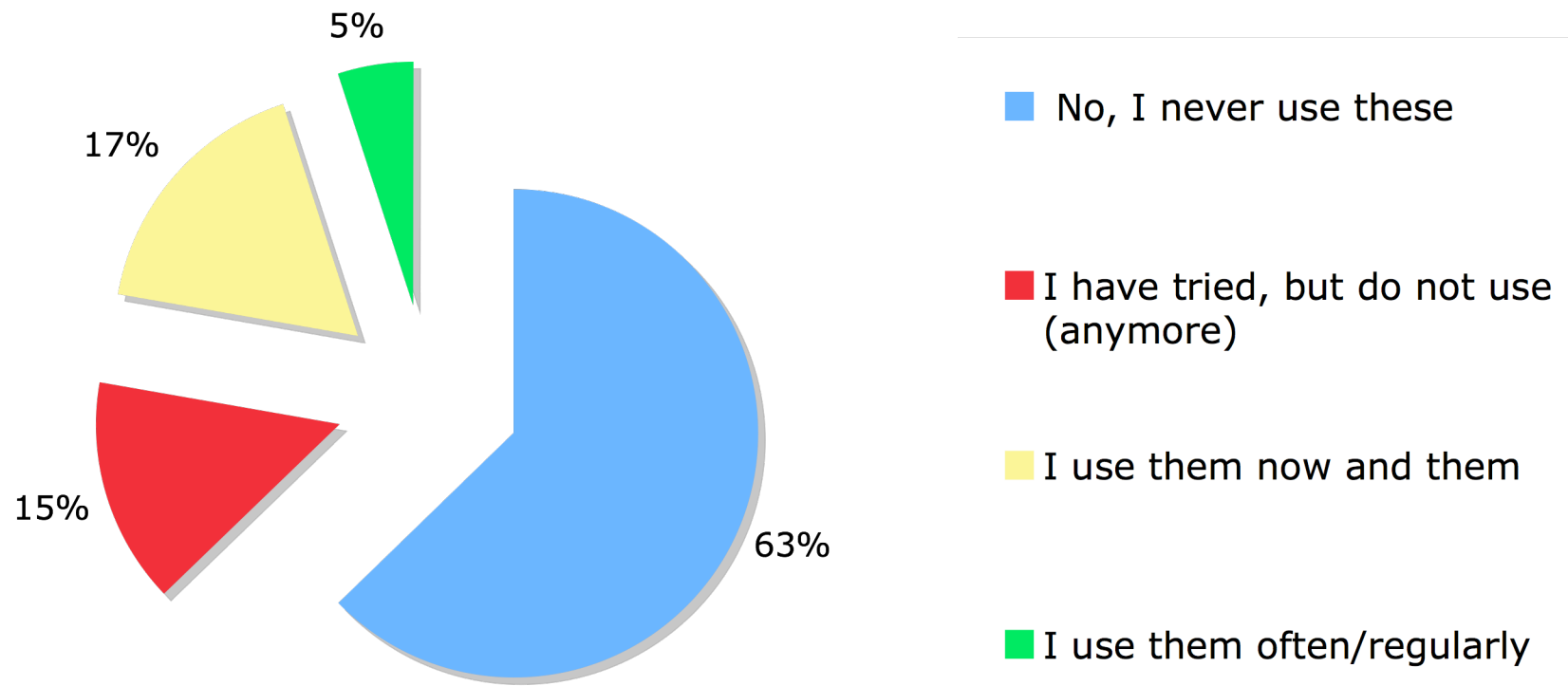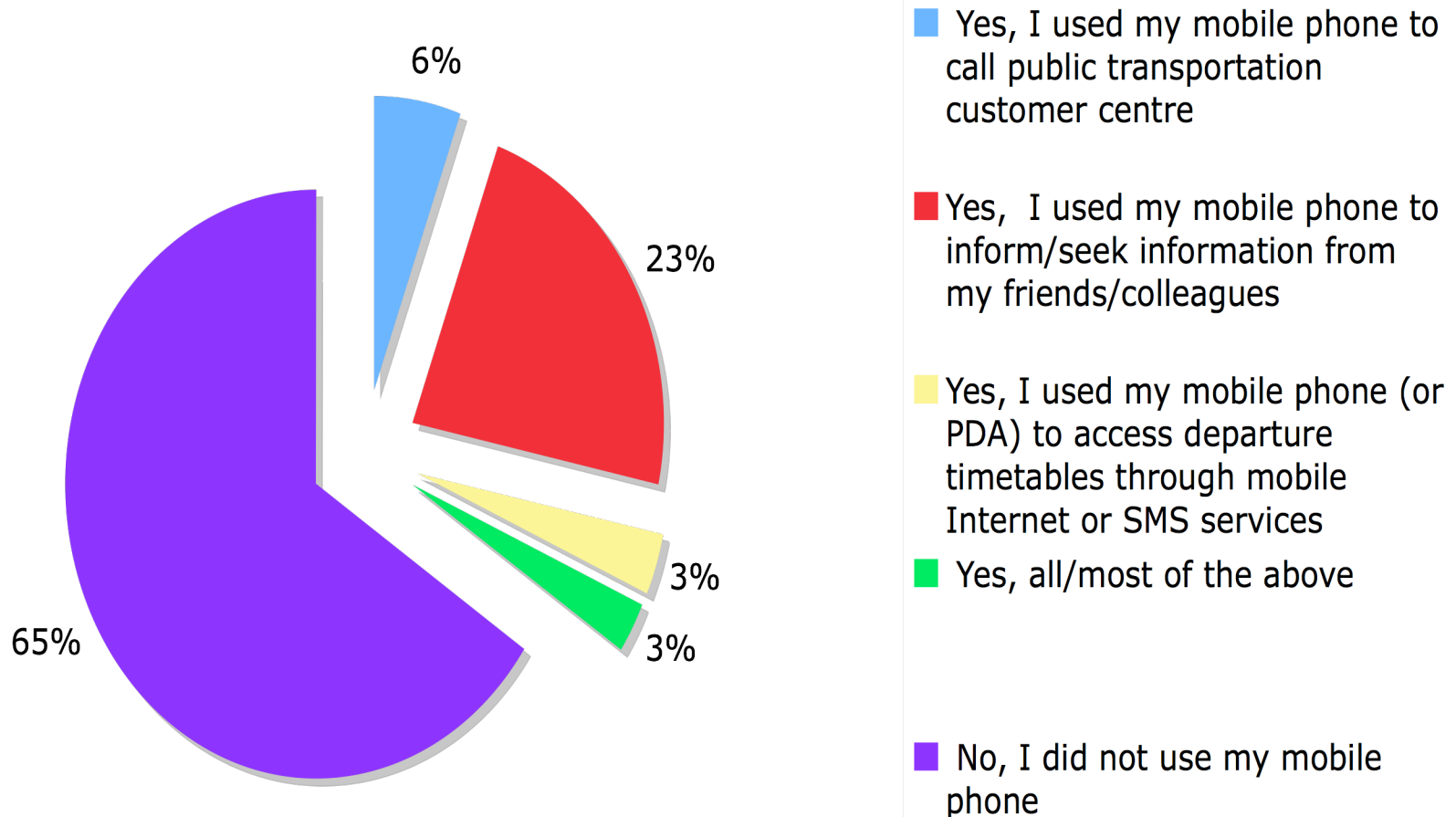# Ex-post survey results

830 respondents and counting...

280 reported being affected by the strike

Do you ever use data services on your phone?

5%

17%

63%

15%

- No, I never use these
- I have tried, but do not use (anymore)
- I use them now and them
- I use them often/regularly

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Did you use your phone when caught in traffic?

6%

23%

3%

3%

65%

- Yes, I used my mobile phone to call public transportation customer centre
- Yes, I used my mobile phone to inform/seek information from my friends/colleagues
- Yes, I used my mobile phone (or PDA) to access departure timetables through mobile Internet or SMS services
- Yes, all/most of the above
- No, I did not use my mobile phone

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Lessons learned

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Lesson 2: complexity of the service provision setup

1. a public-private partnership between HUR and third-party service providers;

2. political decisions on budget allocations for the promotion of HUR's WAP portal, as well as for the development of new services;

3. technology constrains, such as availability of WAP-enabled phones;

4. residual social behavior associated with the use of mobile phones, which is a reflection of "modernity", where

5. using mobile phones for making phone calls is still the dominant behavior, and not the access to data services.

Lesson 1: awareness of availability of services

– people were not aware of the fact, that their mobile handsets could be used as a tool to access the needed information through several media channels;

– mobile data services were not part of the waiting passengers "own version of modernity"

Lesson 3: need to change dominant cognitive frames

In order for the data services to be used in the situation we observed, currently dominant cognitive frames must be amended to foster sought-for behavior.

- Instead of observed:

"Bus delay -> Ask somebody for the meaning -> Use mobile phone"

- a new structure must be instantiated , such as e.g.,:

"Bus delay -> Get real-time timetable to recreate the meaning -> Use mobile phone"

- This is likely to take time, before citizens of Information Society will use mobile data services as intuitively, as they use voice services today, and snow, as rare as it is in Denmark, may be the missing catalyst for the faster advancement of Information Society.

Thank you!

Questions, suggestions, insults...?

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