The design of everyday *pervasive* things

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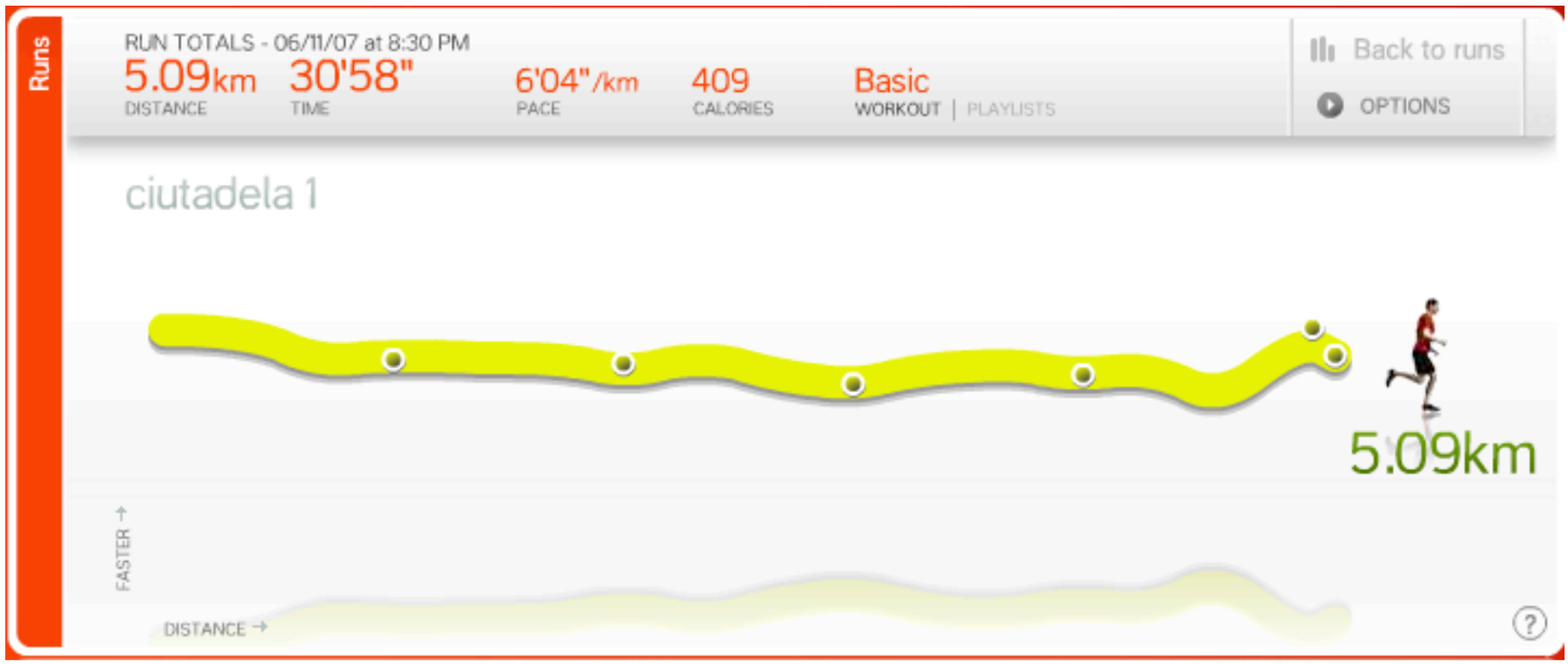
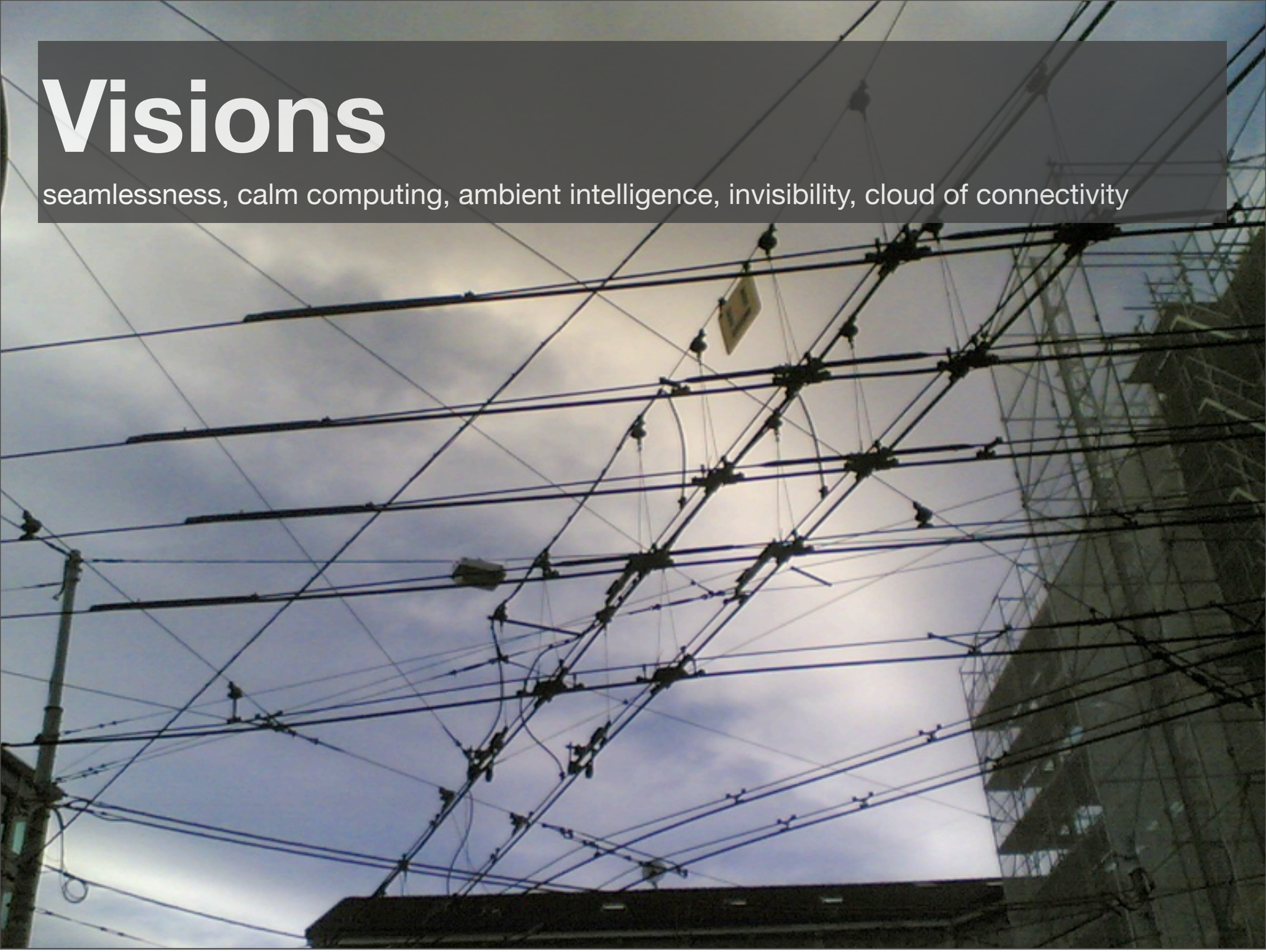
I am Fabien Girardin, PhD student at the Pompeu Fabra University in Barcelona. The context of my research takes place in the integration of ubiquitous technologies in the everyday urban world. Today, I will talk about my observations of the ubicomp of the present and provide some thoughts on how it can affect the design of the near future of the pervasive media experiences.



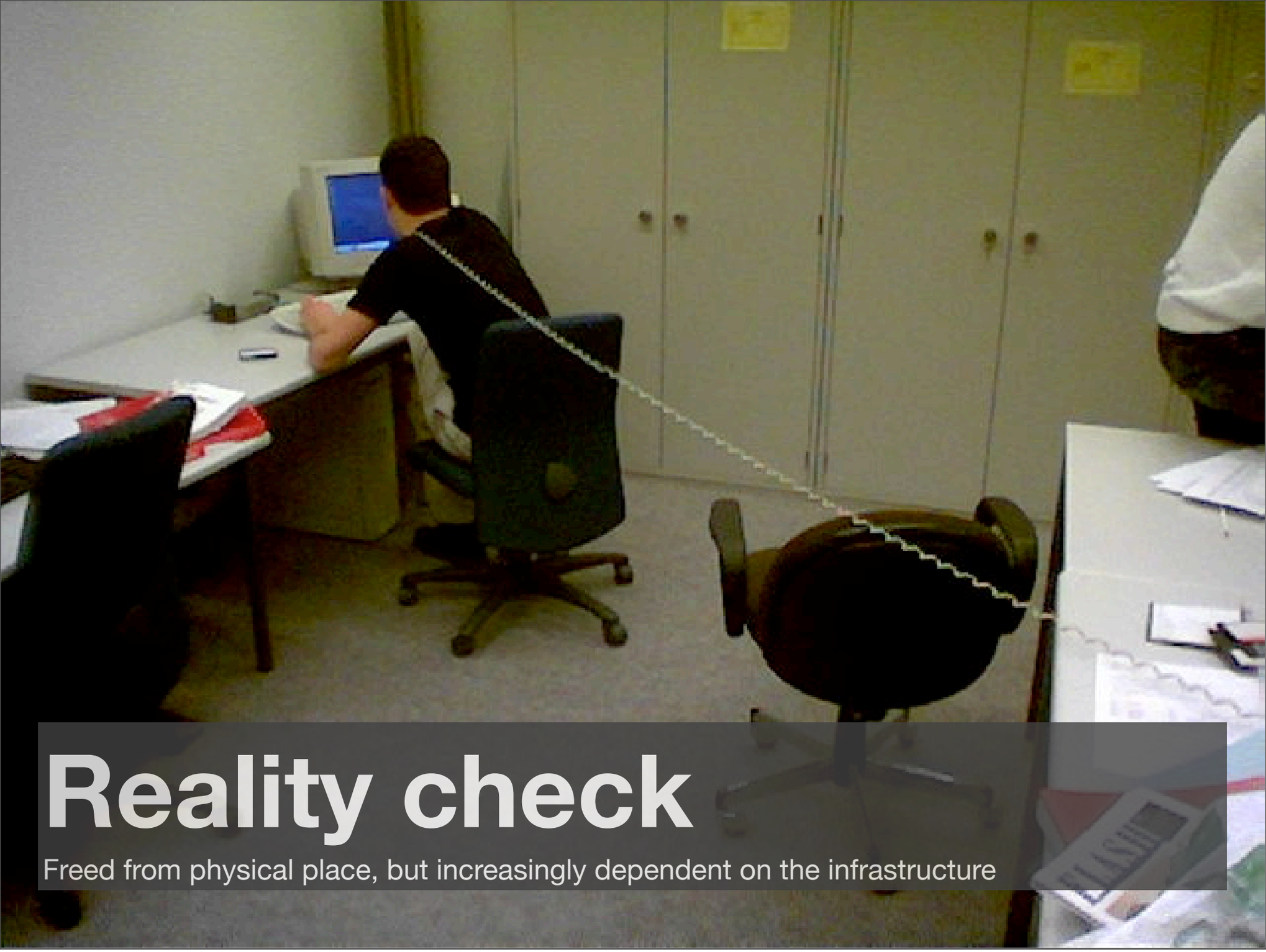
I will start with a small story exemplifying my talk. A year ago, I bought a nike+ kit. That was supposed to be the ultimate pervasive media experience. Unfortunately, my iPod stopped connecting the sensor in my shoe. It happened just after executing an upgrade of the system. I was just puzzled (and still am) to find what was wrong. The sensor was out (more than 1000 hours?), was it the upgrade? The system did not provide me any mean to find out why I could not use the system. And this is one issue that I think has been barely thought about.



Visions

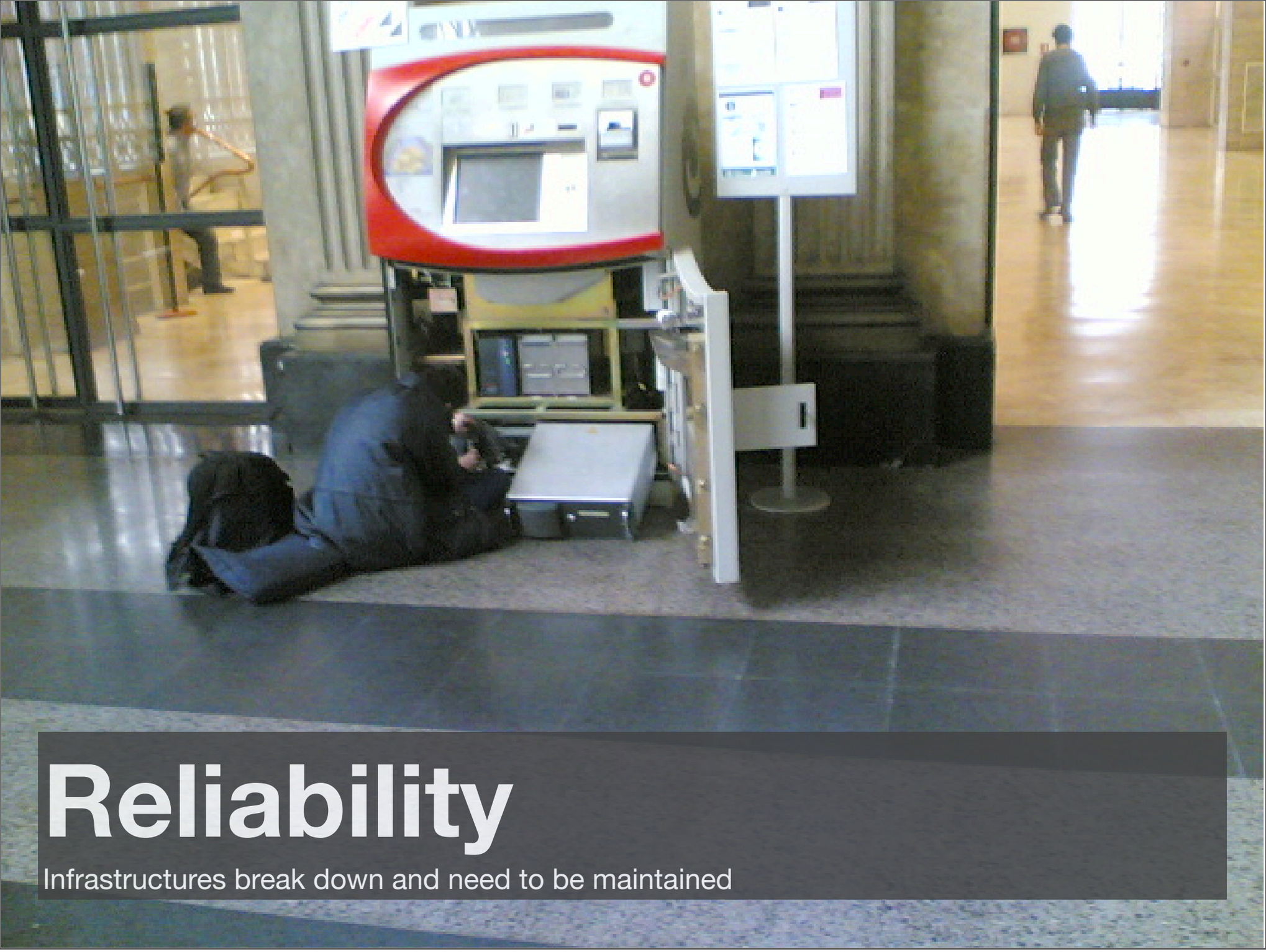
seamlessness, calm computing, ambient intelligence, invisibility, cloud of connectivity

We have a vision of a near future of technologies interconnecting seamlessly, providing us an calm and intelligent ambience, connected all the time, and all that with being integrated in the background of our life.



So yes, we are being freed from the physical place, but that made us increasingly dependent on the infrastructure.

but infrastructures supporting *pervasive media experiences* are about...



Infrastructures are not always reliable. They break down. They need to be maintained. They die.

Coexistence

Systems developed in isolation from each other.

When you deploy sensors in the wild, they must coexist. Unfortunately they are often develop in labs, isolated from each other. This challenges their coexistence, to the point caused problems like this photo taken in an hotel room.

Invisibility

Challenges peaceful cohabitation. Interferences. Reveal the invisible

as the interface has a tendency to become invisible, it challenges their cohabitation. As this photo shows, there is a need to reveal the invisibility.

From my experience (and I guess for the other people in the panel as well), when it comes to interconnecting devices and sensors, each system reacting very differently. Moreover, as this photo (taken in a friend's apartment) highlights, we barely know how to make systems talk to each other (due to economical, political, sociological, technological constraints) .

Ownership

Consumers/customers not owners. Access has a cost

Access to a cloud of connectivity comes with its own cost and can be limited to a set of people.

Cultural bias

How does this work?

the infrastructure can be design with a certain set of cultural/historical influence.

Decay

How do get rid of the old computational elements

Finally, what should I do with my non-working Nike+ sensor?

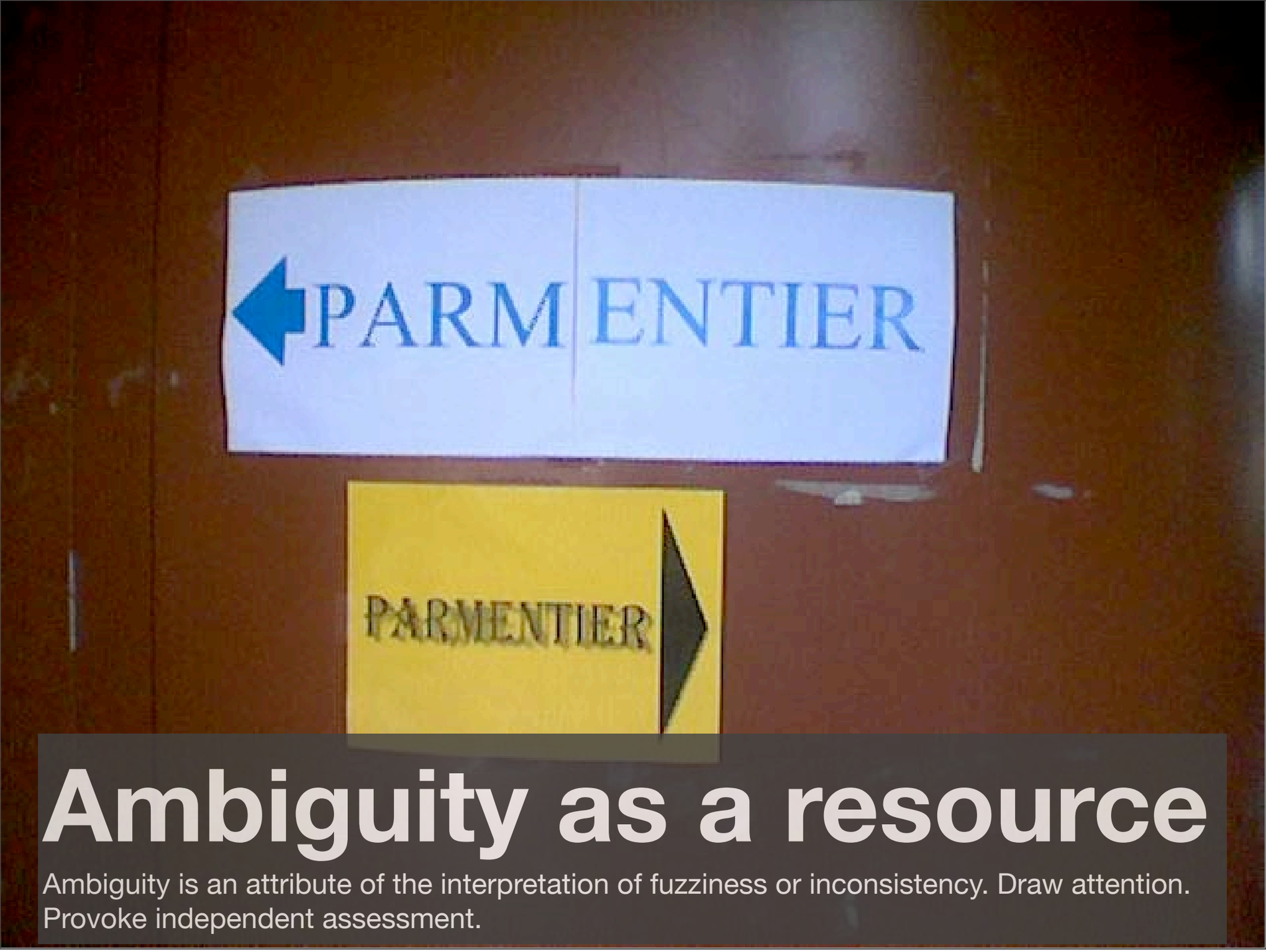
Playfulness

So what can we do with all these issues that challenge the vision of ubiquitous computing and our interaction with these types of environments. I will now provide some examples of how these issues have been assessed in playful environments.

Seamfulness

Reveal the limitations of the technology and design

One way is to intend to disclose the limitation of the technology and design. Like it is done here by mentioning the coverage of a cctv camera.



Ambiguity as a resource

Ambiguity is an attribute of the interpretation of fuzziness or inconsistency. Draw attention. Provoke independent assessment.

The ambiguity of a sensor system can be used to draw attention or provoke thoughts.

Learning from accidents

Errare humanum, perseverare diabolicum: technological fixes often create bigger problems than the ones they were meant to solve in the first place. “Better” can be worse.

Finally, we spend so much time talking about the present successes and and future potential, that we fail to assess the accidents. Of course it is more enjoyable to discuss about prospectives, but we might also learn for the daily mini technological Titanics we experience.

Conclusions

- Technological messiness and limitations shall not be ignored.
- It has hardly been dealt with in the present... will it in a more complex future?
- Since pervasive media should "*invisibly enhance the world that already exists*" it will be necessary to develop an understanding of what failure means and how malfunctioning is communicated to the user.

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