

CWTe 2010 Fall Research Retreat

October 26th 2010



Welcome!



**Strategic
Partners**

**Project
Partners**

**Research
Partners**

**CWTe
Members**

**3TU
Colleagues**

Students

**Research
Institutes**

Industry

CWTe 2010 Fall Research Retreat Agenda

3

09:00	--Registration & coffee	
09:30	Welcome and introduction	Prof. Peter Baltus (TU/e, dir CWTe), + message Prof. Ton Backx (TU/e, dean EE)
09:45	<i>CWTe: creating the (wireless) future !</i>	Prof. Peter Baltus (TU/e, dir CWTe)
10:15	<i>Key note: THz imaging and spectroscopy: the next wireless wave</i>	Prof. Giampiero Gerini (TNO, TU/e), Dr. Marion Matters (Philips)
11:00	--Break (incl. posters)	
11:20	<i>Key note: Better together in a new semiconductor era</i>	René Penning de Vries (CTO NXP), Dr. Hans Rijns (NXP)
11:50	<i>Key note: Open innovation for new wireless systems & applications</i>	Dr. Hans Rijns (NXP)
12:20	--Lunch (incl. posters)	
13:30	<i>Enabling low power, multi-radio coexistence</i>	Erwin Janssen (TU/e)
14:00	<i>Ultra-low power wireless design of autonomous sensor networks</i>	Peng Zhang (TU/e)
14:30	--Break (incl. posters)	
14:50	<i>Efficiency improvements in wireless networks for future European communication needs</i>	Dr. Rob Mestrom (TU/e)
15:20	<i>Wireless Wire - ultra-low power and high-data-rate wireless interface</i>	Xia Li (TU/e)
15:50	Closing session	Prof. Peter Baltus (TU/e, dir CWTe)
16:30	--Drinks	

CWTe 2010 Fall Research Retreat Agenda

4

09:00	--Registration & coffee	
09:30	Welcome and introduction	Prof. Peter Baltus (TU/e, dir CWTe), + message Prof. Ton Backx (TU/e, dean EE)
09:45	<i>CWTe: creating the (wireless) future !</i>	Prof. Peter Baltus (TU/e, dir CWTe)
10:15	<i>Key note: THz imaging and spectroscopy: the next wireless wave</i>	Prof. Giampiero Gerini (TNO, TU/e), Dr. Marion Matters (Philips)
11:00	--Break Posters	
11:20	<i>Key note: Better together in a new semiconductor era</i>	Dr. Hans Rijns (NXP) , René Penning de Vries (CTO NXP)
12:20	--Lunch Posters	
13:30	<i>Enabling low power, multi-radio coexistence</i>	Erwin Janssen (TU/e)
14:00	<i>Ultra-low power wireless design of autonomous sensor networks</i>	Peng Zhang (TU/e)
14:30	--Break Posters	
14:50	<i>Efficiency improvements in wireless networks for future European communication needs</i>	Dr. Rob Mestrom (TU/e)
15:20	<i>Wireless Wire - ultra-low power and high-data-rate wireless system</i>	Xia Li (TU/e)
15:50	Closing session , Quest results and prizes	Prof. Peter Baltus (TU/e, dir CWTe)
16:30	--Drinks	



by prof. dr. ir. A.C.P.M. Backx
Dean of the Department of Electrical Engineering

Centre for Wireless Technology, Eindhoven

CWTe Research Retreat

Ton Backx



Where innovation starts



CWTe:

Creating the Wireless Future!

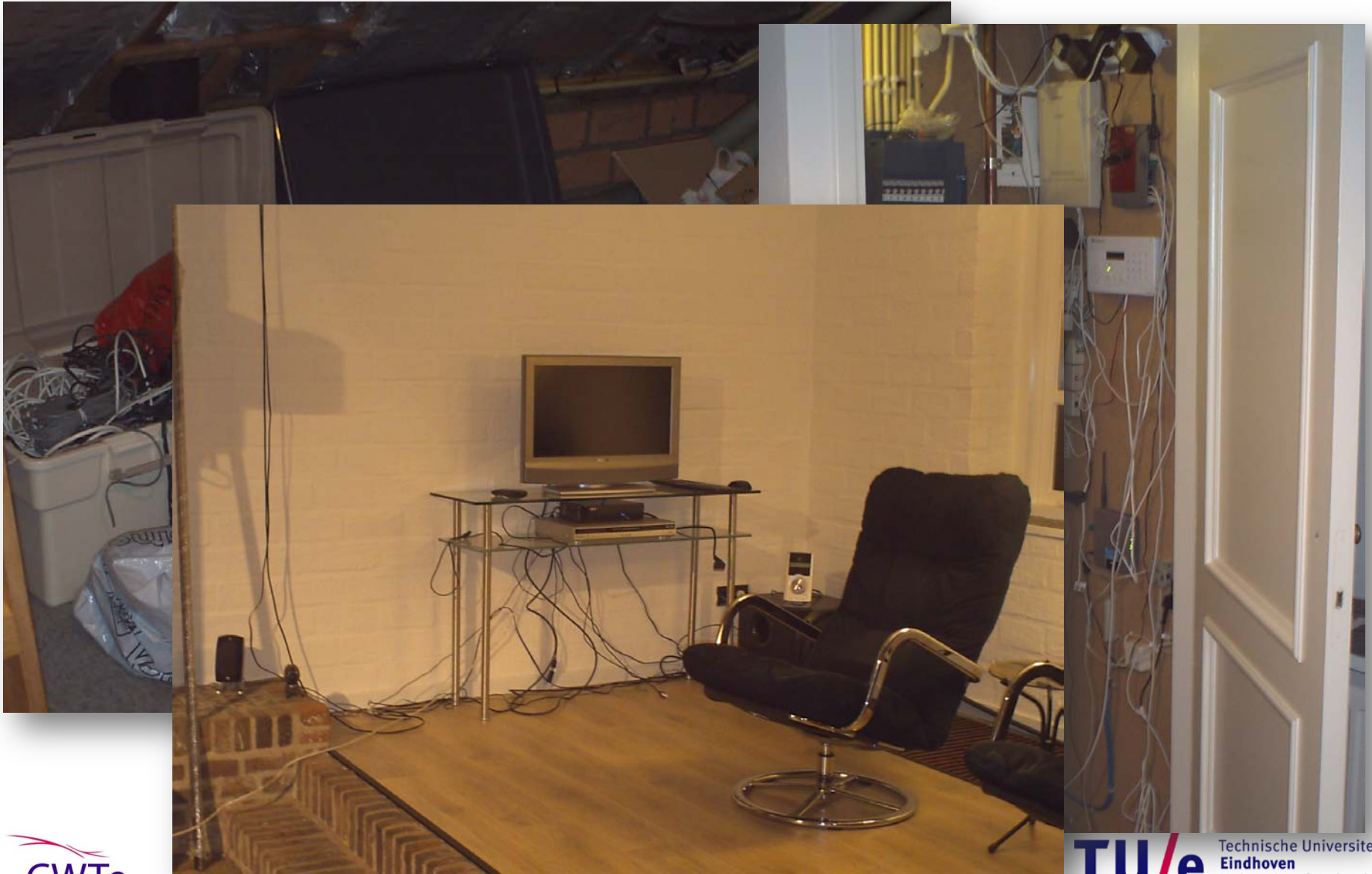
Peter Baltus

CWTe Research Retreat, October 26th 2010

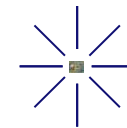
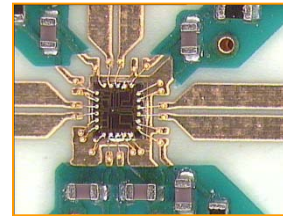


- **Wireless...**
- **Trends**
- **Predicting or Creating the Future?**
- **CWTe**
- **Research programs**
- **Today**
- **Your part**

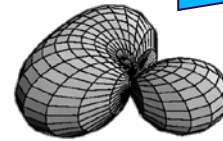
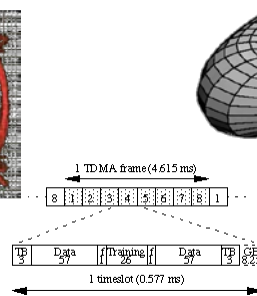
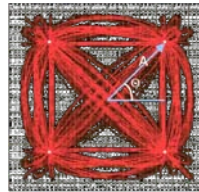
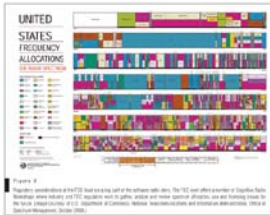
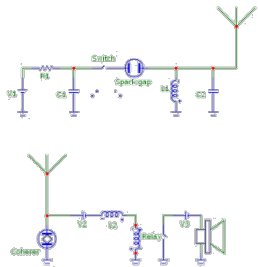
Wireless...



Wireless Technology Trends



“Ubiquitous”: Invisible & cheap

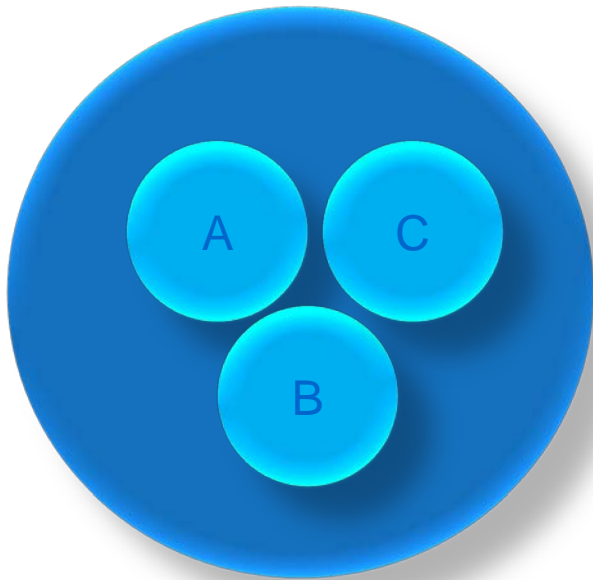


“Shared Channel”: Robust & Efficient

Complexity

Wireless Industry Trends

Business models:



To: "Global Competition"

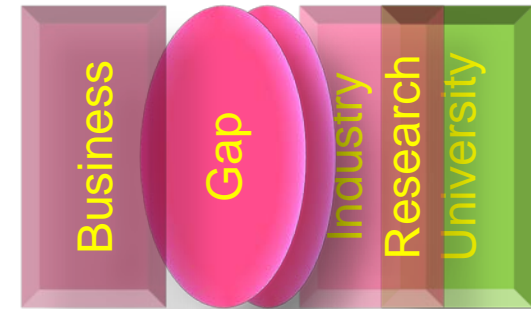
Planning & ROI:



Time →

To: "Dynamic Markets"

Industrial Research:



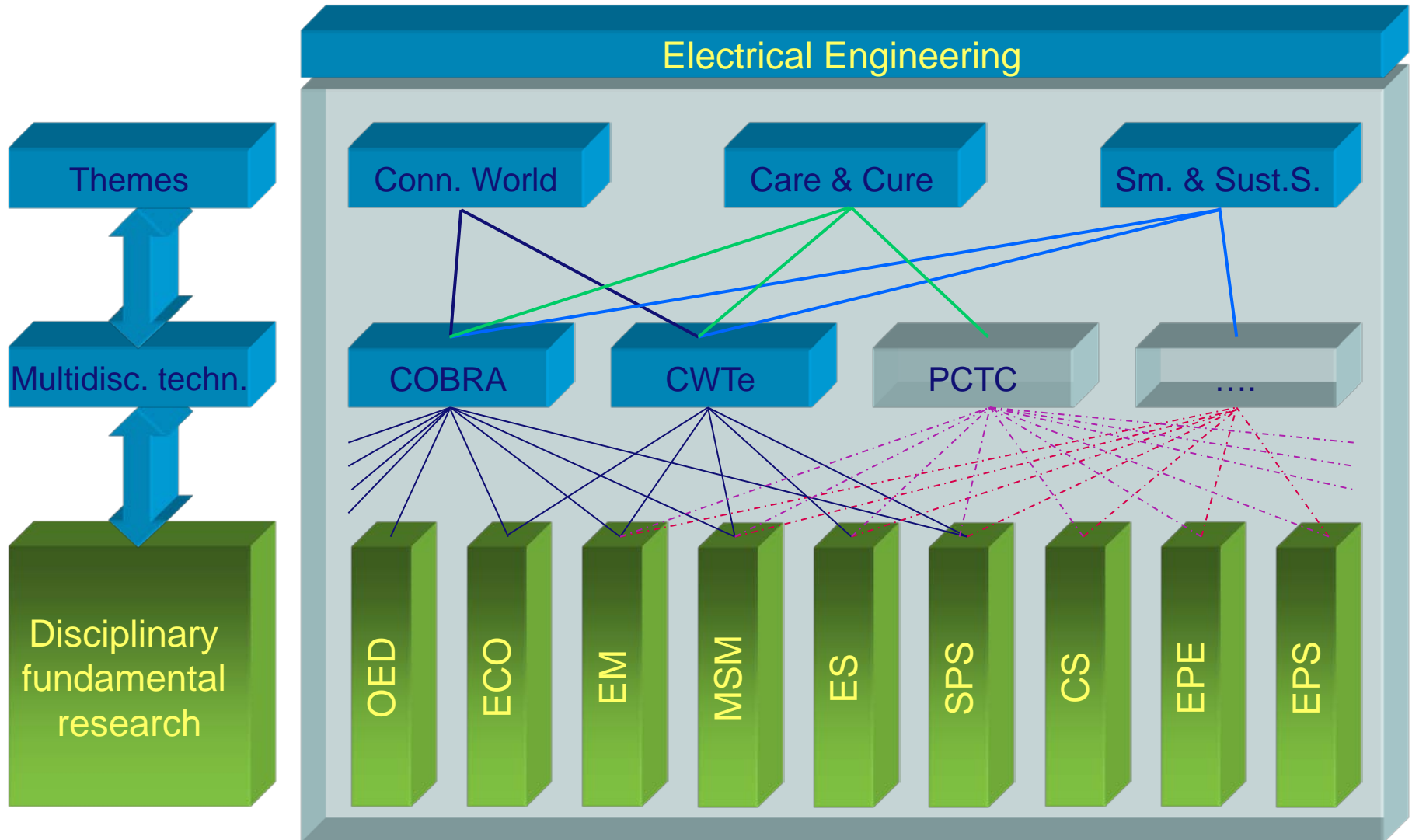
To: "Innovation"

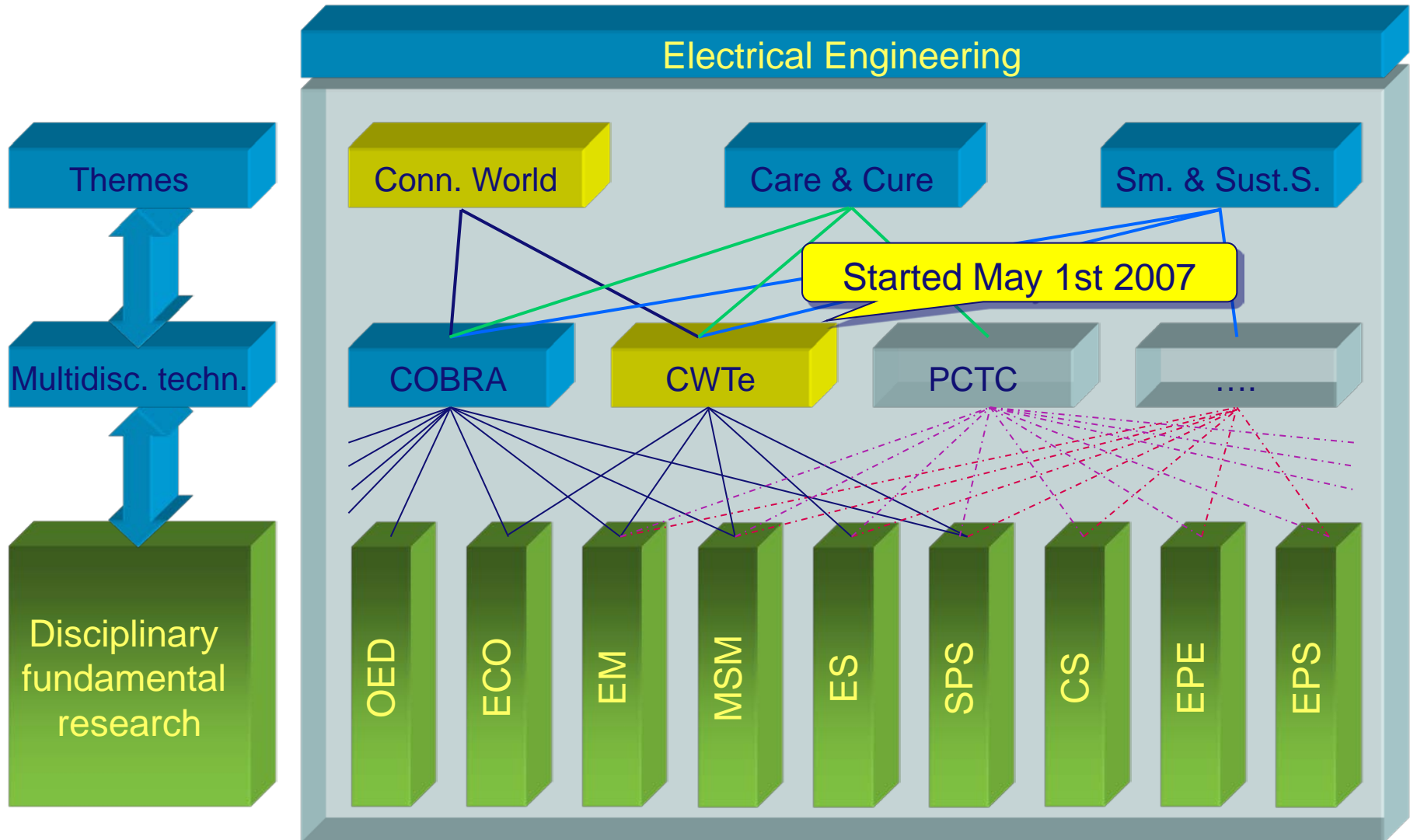
Predicting or Creating the Future?

12

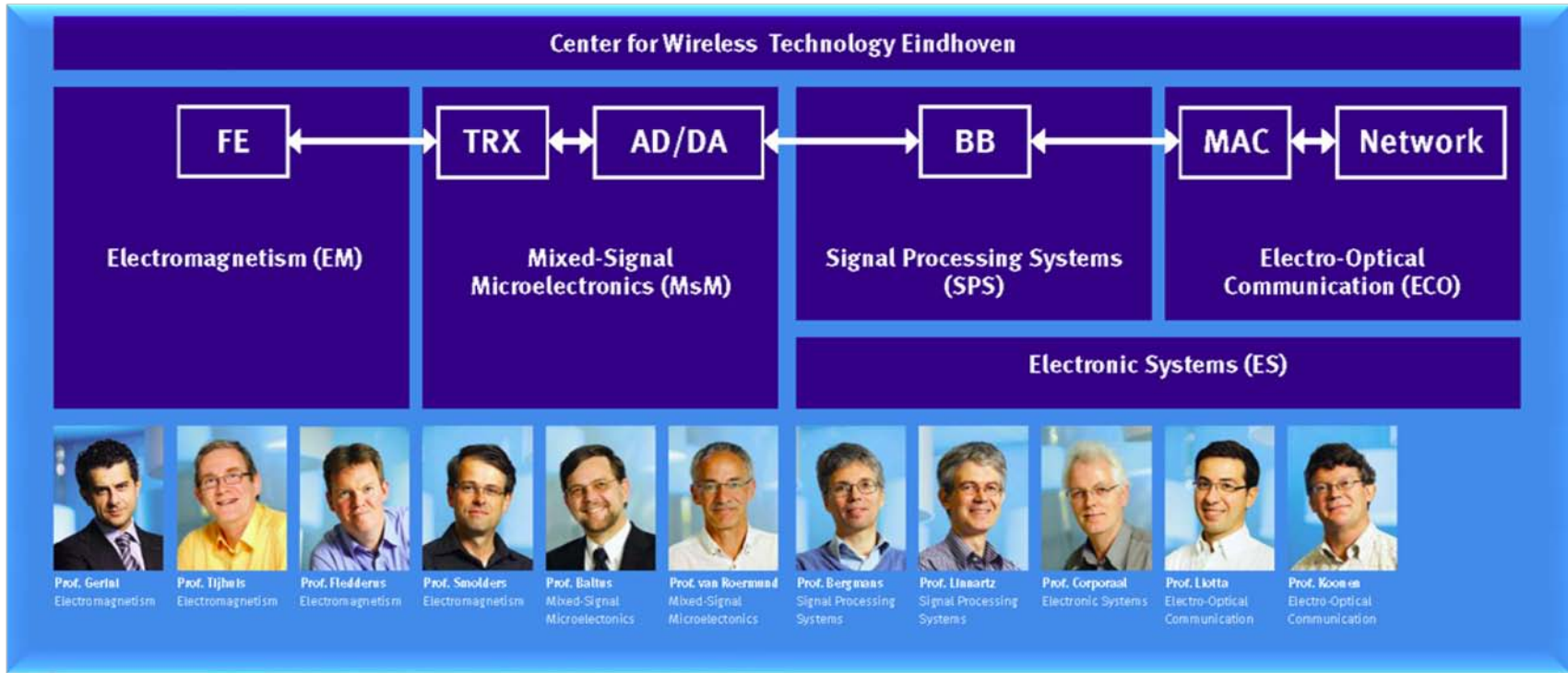
- **Increasing complexity**
 - **Loss of control**
- } **(Attempts at) Predictions**
- **Alternative model:**
 - **Build shared vision of desirable future**
 - **Cooperation between industry & academia to create**
 - **E.g.: “Moore’s Law”, “Edholm’s Law” etc.**
 - **Approach:**
 - **Use roadmaps to build shared vision, shared projects**
 - **“Fill the gap” between university research & industry:
Research centers for multi-disciplinary technology**

Strategy/organisation of EE

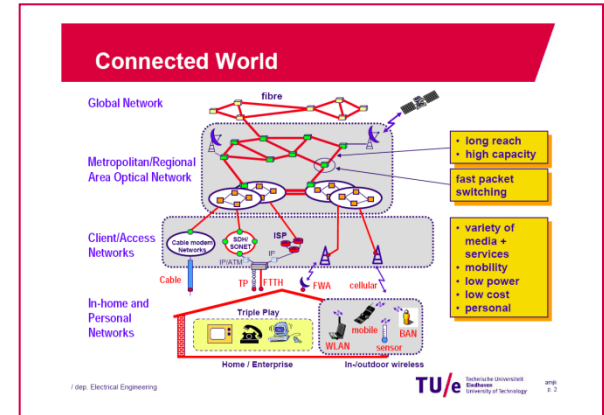
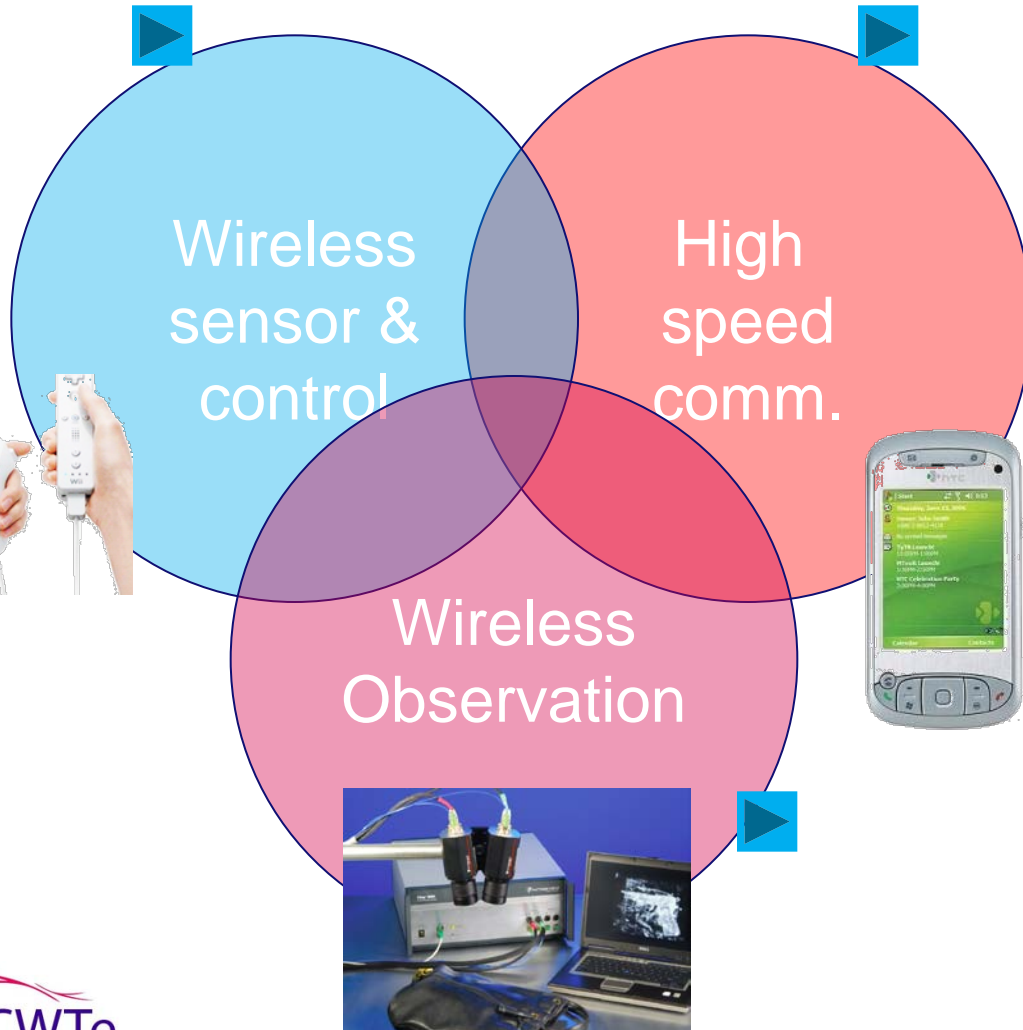




Filling the Gap: CWTe



Wireless Technologies: Application Areas



- **Morning session: Keynotes on**
 - THz imaging (TNO & Philips)
 - Industry/academia cooperation on wireless (NXP)
- **Afternoon session: Technical presentations on**
 - Low-power co-existence (Erwin Janssen)
 - ULP autonomous wireless sensors (Peng Zhang)
 - Efficiency improvement in wireless (Rob Mestrom)
 - Wireless Wire (Xia Li)
- **Closing session**
- **Drinks**

Your Part: CWTe Quest 2010

- Your vision on wireless applications & tech in 2030
- Forms available in 1st break (11:00) on tables
- Return forms during last break (14:30)

- What new wireless application would you want to see in 2030?
- What technology would we need for that?



Your name: _____ Your organization/company: _____

Your idea: _____

First prize:



Rules:

Presentations
Best 3 visions
At closing session

Selection by Jury:
• 1 person industry
• 1 person university
• 1 chair (me)

All registered
Participants qualify
Except jury

Jury Selection:

--	--	--

Enjoy the Program!




CWTe

Centre for Wireless Technology Eindhoven

***Key note:
THz imaging and spectroscopy:
the next wireless wave***

Prof. Giampiero Gerini (TNO, TU/e),
Dr. Marion Matters (Philips)



TU/e

Technische Universiteit
Eindhoven
University of Technology

Where innovation starts

**Break & Posters
Until 11:30**

Key note:
**Better together in a new
semiconductor era**

Dr. Hans Rijns
Dr. René Penning de Vries
NXP Semiconductors



TU / **e**

Technische Universiteit
Eindhoven
University of Technology

Where innovation starts

Lunch & Posters Until 13:30

Enabling low power, multi-radio coexistence

Ir. Erwin Janssen (TU/e)



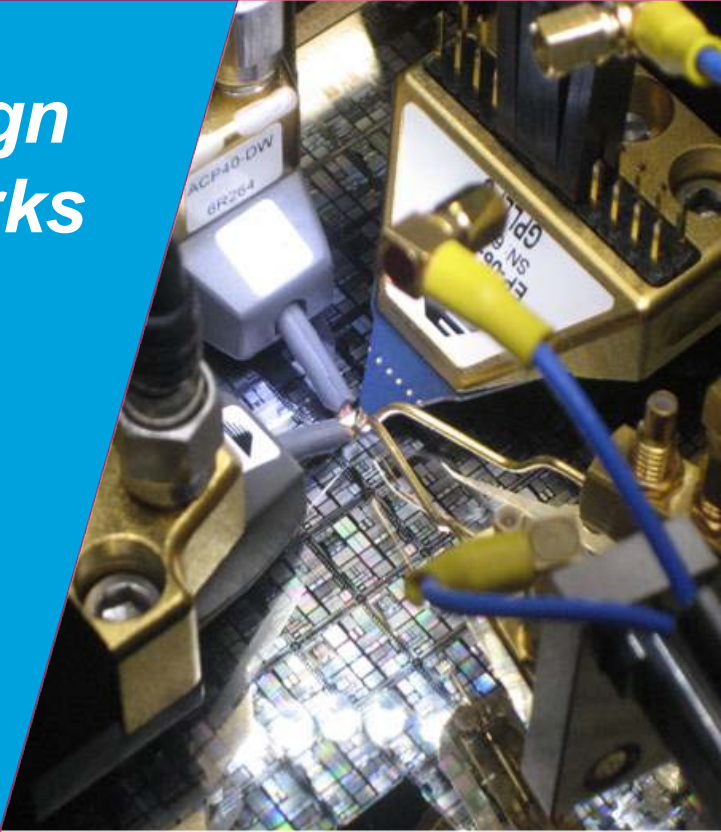
TU/e

Technische Universiteit
Eindhoven
University of Technology

Where innovation starts

Ultra-low power wireless design of autonomous sensor networks

Peng Zhang, MSc (TU/e)



TU/e

Technische Universiteit
Eindhoven
University of Technology

Where innovation starts

**Break & Posters
Until 14:50**

Efficiency improvements in wireless networks for future European communication needs

Dr. Rob Mestrom (TU/e)



TU/e

Technische Universiteit
Eindhoven
University of Technology

Where innovation starts

Wireless Wire – Ultra-Low Power and High-data-rate Wireless Systems

Xia Li, MSc (TU/e)



TU / **e**

Technische Universiteit
Eindhoven
University of Technology

Where innovation starts

Closing Session

Peter Baltus



TU / **e**

Technische Universiteit
Eindhoven
University of Technology

Where innovation starts

- **Received xx submissions**
- **Jury selected 3 “best” visions on**
 - **Wireless applications**
 - **Technology**
- **Not taking author/affiliation into account**

- **Authors are invited to present their ideas**
- **And receive their prize**

- **Starting with 3rd prize:**

- **Author:**

- **Description:**

- **Author:**

- **Description:**

CWTe Quest first prize

34

- **Author:**

- **Description:**

- **Special thanks to**
 - **Margot van den Heuvel**
 - **Pauline van Gelder-Hoen**
 - **Jan Haagh**

- **Regular thanks to:**
 - **Presenters**
 - **CWTe partners, researchers & staff**
 - **All attendees**

We hope you enjoyed this first CWTe research retreat.

See you next time!



CWTe

Centre for Wireless Technology Eindhoven