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# Future of wireless technology

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Christian Bonnet

Institut Eurecom

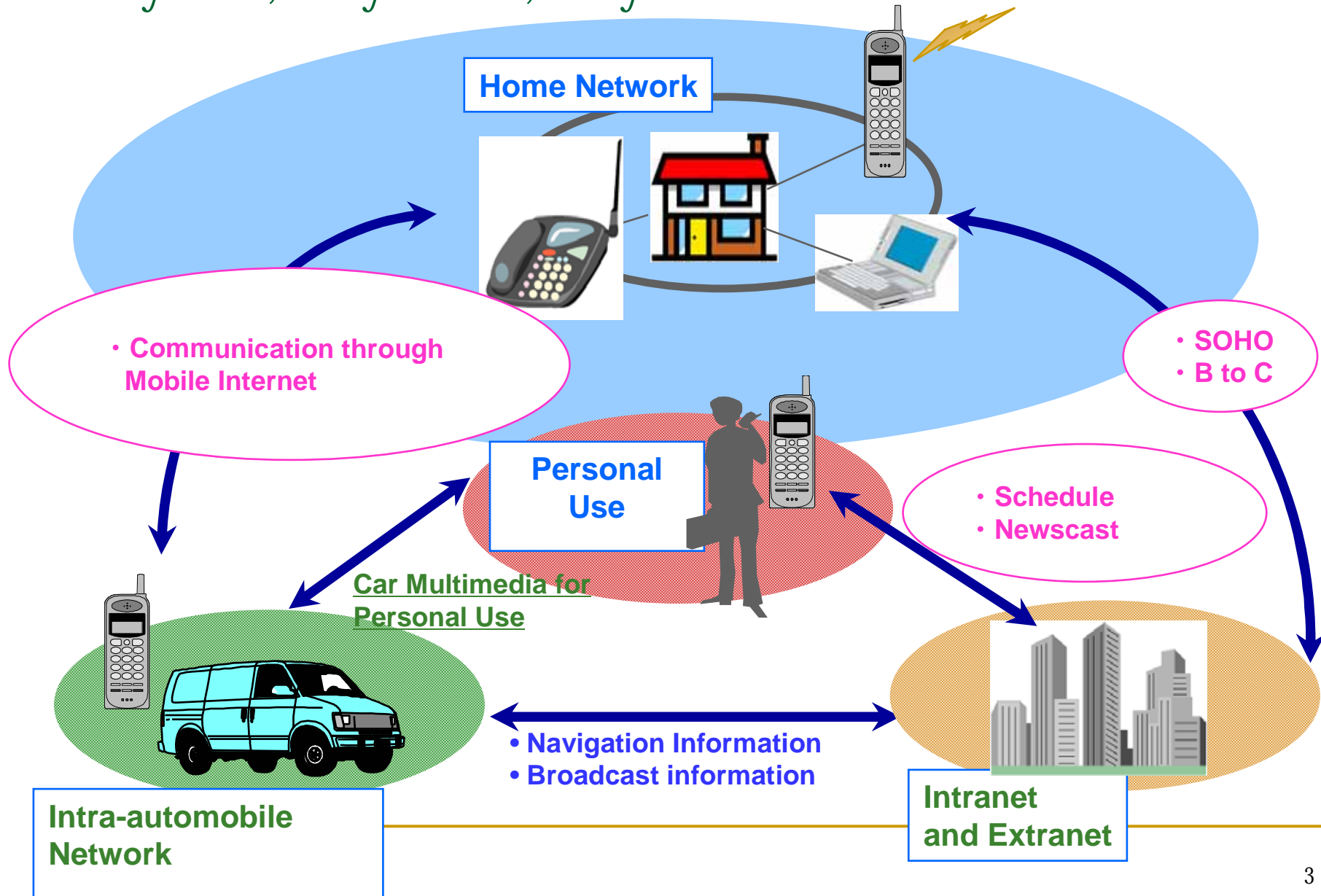
<http://www.eurecom.fr/>

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# Agenda

- ❑ Present “Ubiquitous Society”
- ❑ Some possible scenarios
- ❑ Consequences
- ❑ What if ...?
- ❑ Conclusions

# “Ubiquitous Society”, Anytime, Anywhere, Any Information



# Scenario (IST FP6 DAIDALOS)



1



personal broadcast preferences

2



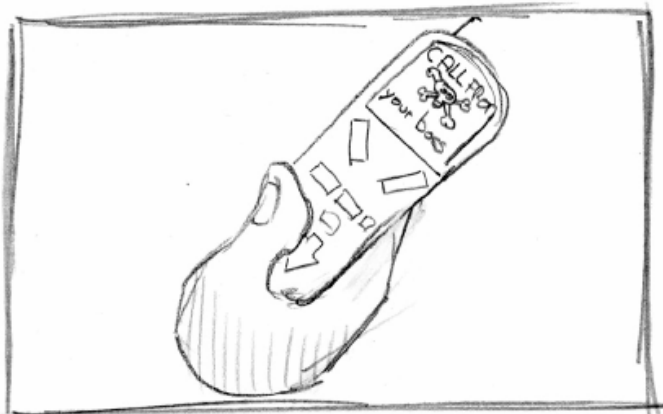
home flat screen

3



a call is coming

4



it's your boss...

Flight Information

5

Personal Information



visiophone on the tv-screen

Transfer all Information to the handheld terminal



# Scenario (IST FP6 DAIDALOS)



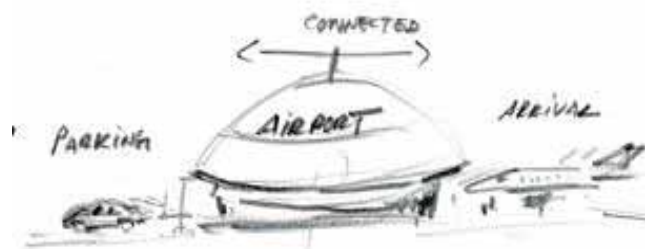
Bart is entering his car



Car is setting up is personnel service profile



Car navigation system is guid him to the Airport



Airport notified automaically that plan from R.R. will be delay



Car navigation system is leads him to the reserved parking slot



Bart uses watching his newscast while he updates his new pervasively available contacts database and calendar with his new appointment

# Scenario



**“The customer’s flight is delayed. He uses the available time and resumes watching his newscast while he updates his calendar with his new appointment.”**

Possible multiple users !



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# Consequences on actual systems

- ❑ Convergence between Broadcast and Mobile Networks
- ❑ Mobile Internet is mandatory
- ❑ Traditional handover = one side of the game
- ❑ Session switchover
- ❑ Context passing
- ❑ Service discovery

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# Consequences (continued)

- ❑ End to end QoS Management
- ❑ Resource Management
- ❑ “Environment Aware” Sessions
- ❑ Enhanced Messaging (“buddy finder”)
- ❑ Security and Privacy (mixing public and private information)
- ❑ Intelligent billing and charging



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# Dreams from the past

- ❑ a unique communication system,
  - ❑ a unique standard,
  - ❑ a unique portable device,
  - ❑ a killer application
- 
- ❑ Convergence ?

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# What if ...

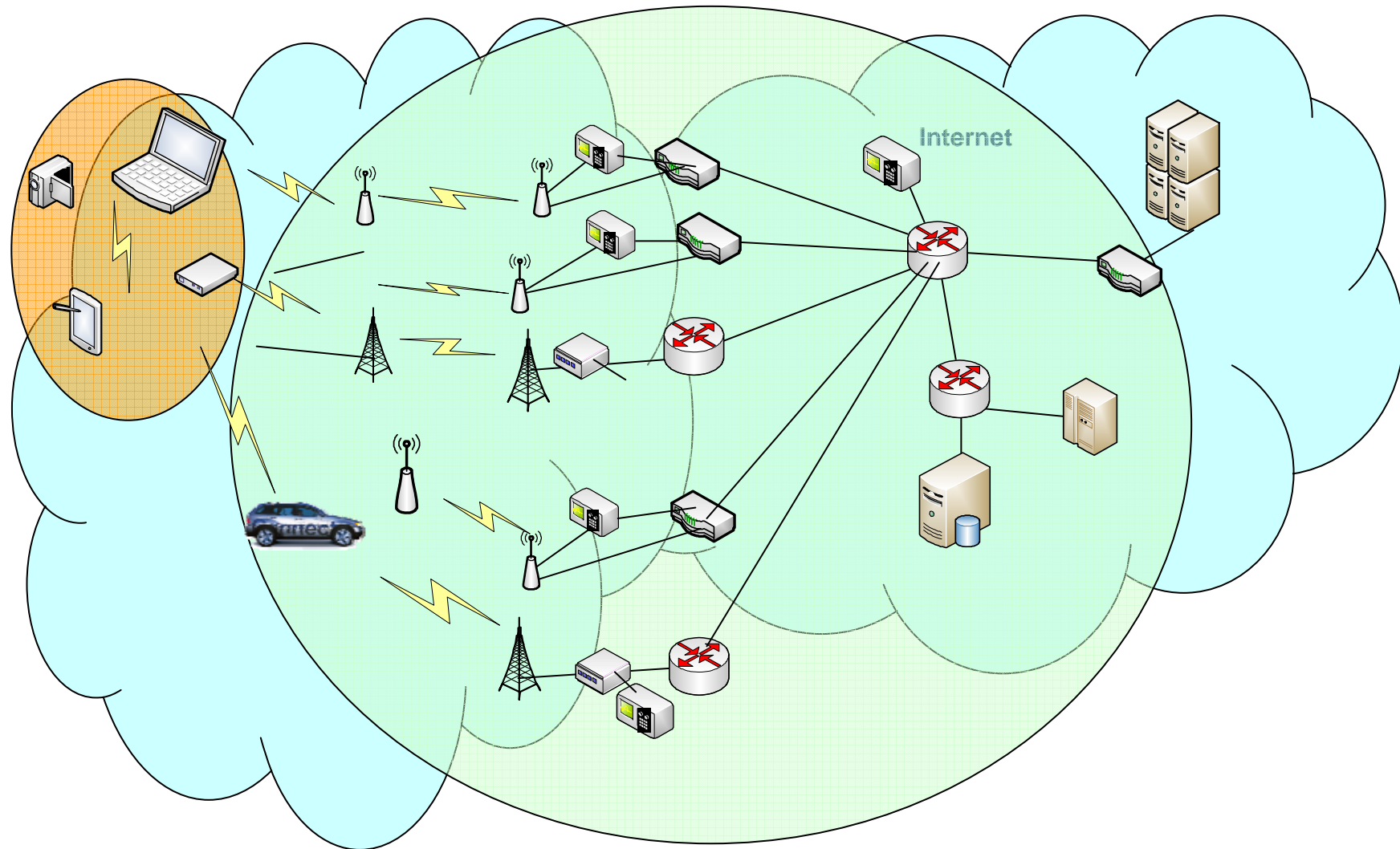
- ❑ What if we are not connected to base stations but to multiple transmission elements?
- ❑ What if no band is reserved to a particular radio access transmission technology?
- ❑ What if neither a unique standard nor a multiplicity of standards exist?
- ❑ What if no mobile phone?
- ❑ What if no killer application?

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# Multiple Transmission

- ❑ Typical advances: Multi user, Multi Antennas, Multi stations
- ❑ ... Within one system
- ❑ 4x2 transmissions in 2020 ?

# Multiple Transmission Elements



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# Standards : none or more ?

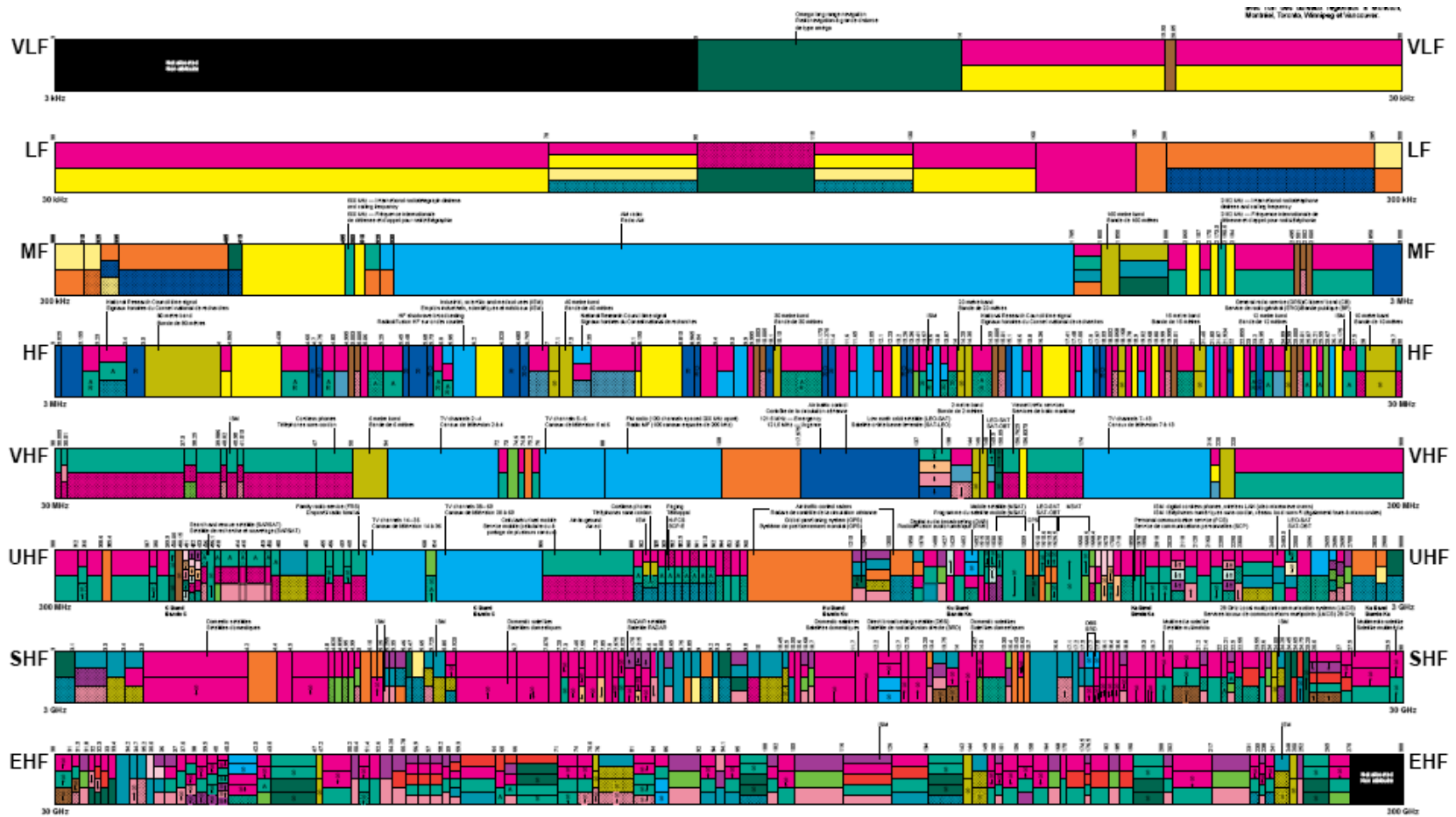
- Another type of convergence
  - No unique standard but a common strategy coming from a common abstraction framework.
  - the needs of abstraction (coming from flexibility requirements)
  - Physical layer abstraction
  - Protocol abstraction
  
- Adaptability to various environments/ usages

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# Radio spectrum

- ❑ Do we need to reserve (negotiate) new chunks of radio spectrum?
- ❑ What if no reservation?

# No band reserved to radio access ?



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# What if no mobile phone?

- Do we need a single device integrating Camera, Music, video, Messaging, ....?
- Instead of a unique terminal (too smart phone !?):
- An automatic distribution / composition of functions
- Automatic sensing + user profile + content adaptation + application needs



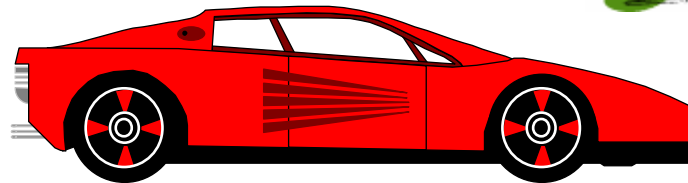
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# What if no killer application?

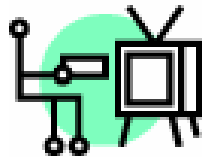
- Content delivered by users in any form, community based approach.
- What if can choose to be present or not for instant communications ? Smart profiling

# Conclusions ?!

From Patch to Coherent approach,  
the next breakthrough?



Multimodal situations



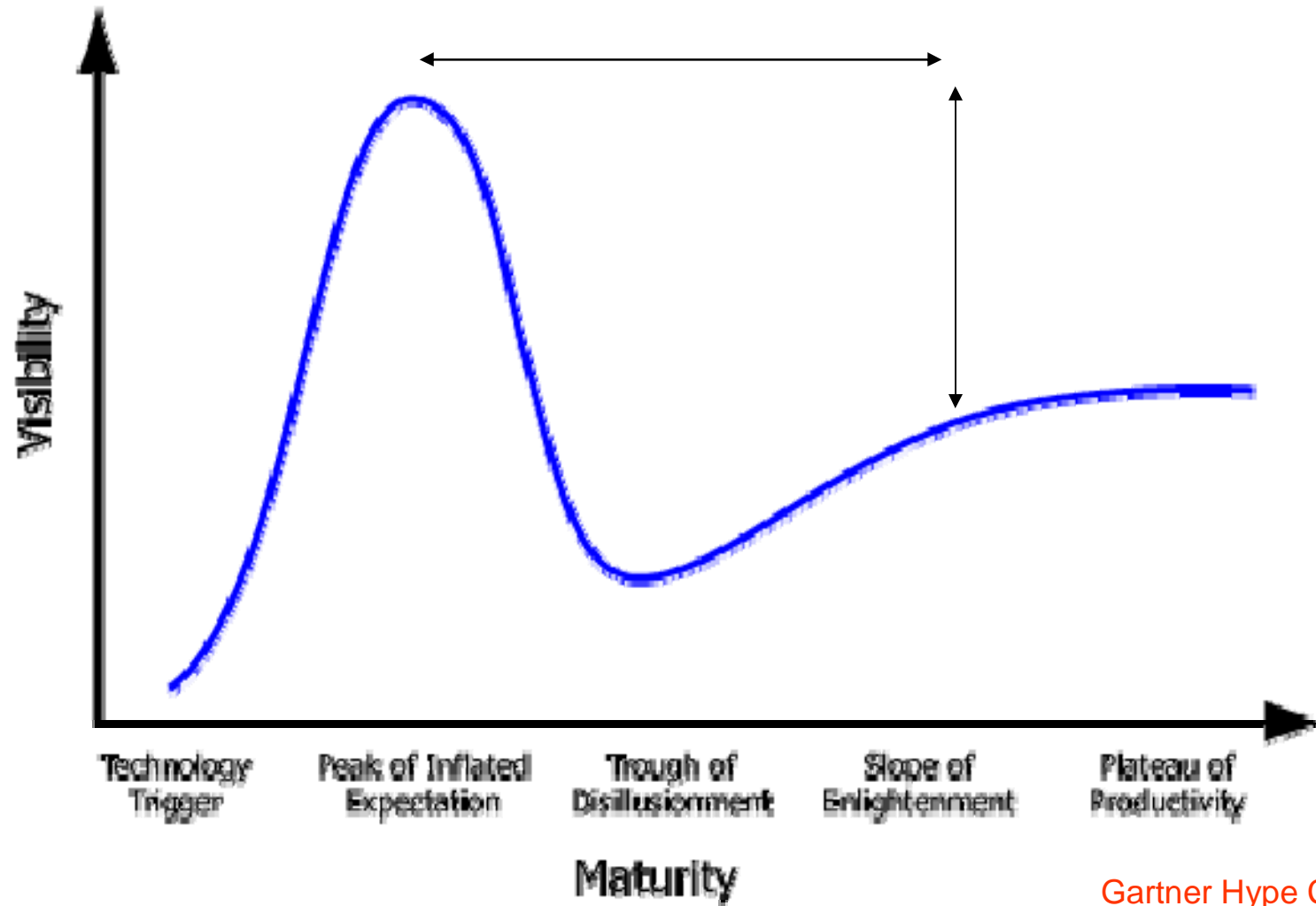
# Back to the future

- ❑ a unique communication system, **framework**
- ❑ a unique standard, **abstraction view**
- ❑ a unique portable device, **combination process**
- ❑ a killer application : **user collaborative content**
  
- ❑ Convergence ? With new Internet



Universal studios

# Where are we ?



Gartner Hype Cycle