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# Innovation & Mobile Trends

CIn/Samsung Research and Development Unit



# Why Innovation

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*“Innovation is considered a source of competitive advantage and economic growth, and worthy of study under the conditions of increased **global competition**, technological change, **fast-changing market** situations and continuous customer/client **demand for quality** services.”*

Creativity and Innovation Management Magazine, 3, pp. 139–161.



# Why Innovation

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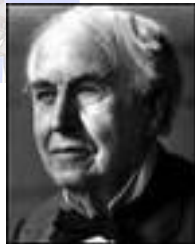
- 1,7% of Brazilian enterprises work with innovation
  - » Generally enterprises that export their products
  - » Such enterprises account for more than 25% of the industrial economy
- Brazil does not have tradition in carrying out process of innovation
  - » Brazilian corporations invest 45% more than foreign corporations (in Brazil)
- Universities and Petrobras represent 8 of the 20 principal patents generators
  - » UFMG is the principal among the universities
  - » UFMG has a return of R\$1 Million in royalties between 2004 and 2006
- Technology transfer via patents is a long-term process
  - » Hard to be consolidated in universities as source of resource



# Why Innovation



- Bad example (War of Currents)



Thomas Edison

DC Current

**X**

AC Current



George Westinghouse

- Good example (Stem cells generation)



Ian Wilmut

Human embryos

**X**

Skin cells



Shinya Yamanaka



# How to Innovate

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- Knowledge vs. Imagination
  - » “The true sign of intelligence is not knowledge but imagination”
- Research
  - » Human activity based on intellectual investigation and aimed at discovering, interpreting, and revising human knowledge on different aspects of the world.
- Research Methods
  - » Ways to carry out out research



# How to Innovate



If we decided by developing a service/application in the Social Sciences area, we can have meetings and interactions with the related people to find opportunities and have insights about potential solutions.

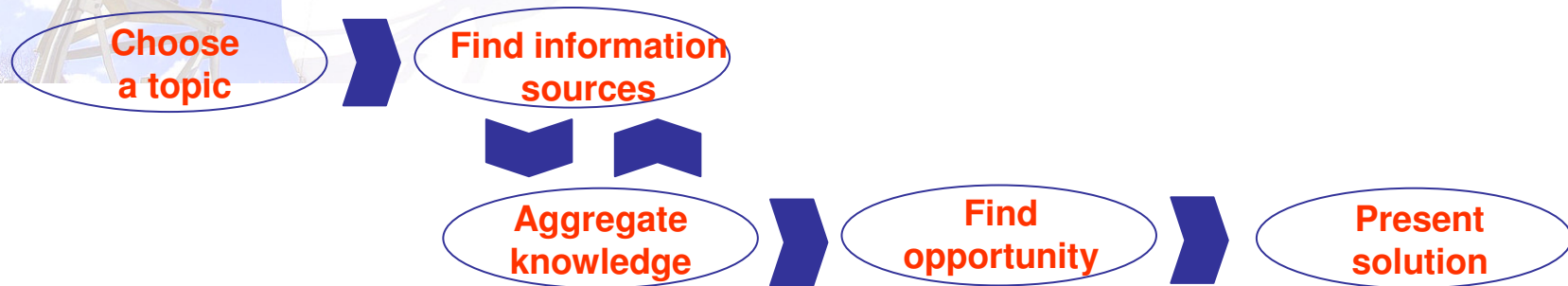
## Participatory (or Survey)



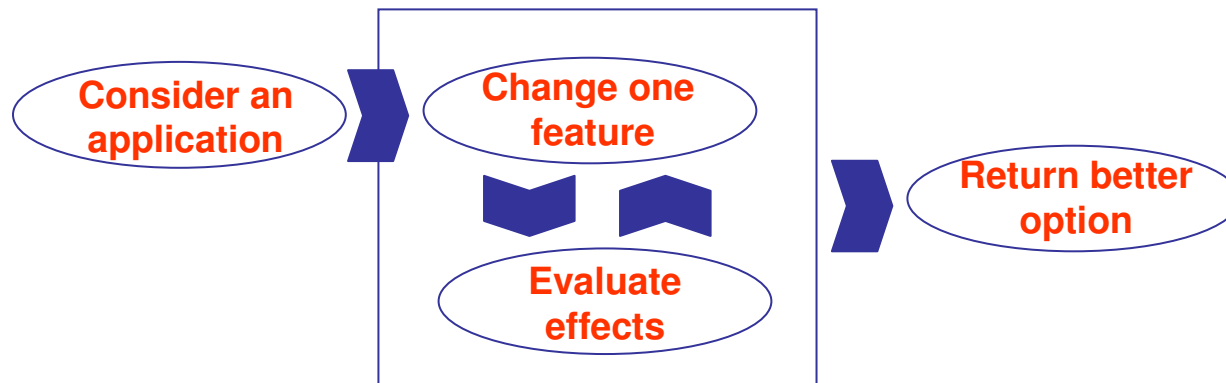
# How to Innovate



## Exploratory (or Case Study)



## Experimental



# Types of Innovation

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- Internal Innovation
  - » Changes on Internal processes
    - AI mechanisms (intelligent planning)
    - Autonomic computing
    - Use of statistical methods
  
- External Innovation
  - » Generation of new products to market





# Example of Academic Innovation



ARTIFICIAL\_INTELLIGENCE-APPLICATIONS-INSTITUTE

**“International Innovation In Artificial Intelligence”**

Four decades of world-leading research and teaching in AI at Edinburgh  
Two decades of innovative applications of AI at AIAI

Optimum-AIV

FireGrid

Expert Provisioner

Ghost Writer

Fraud Detection



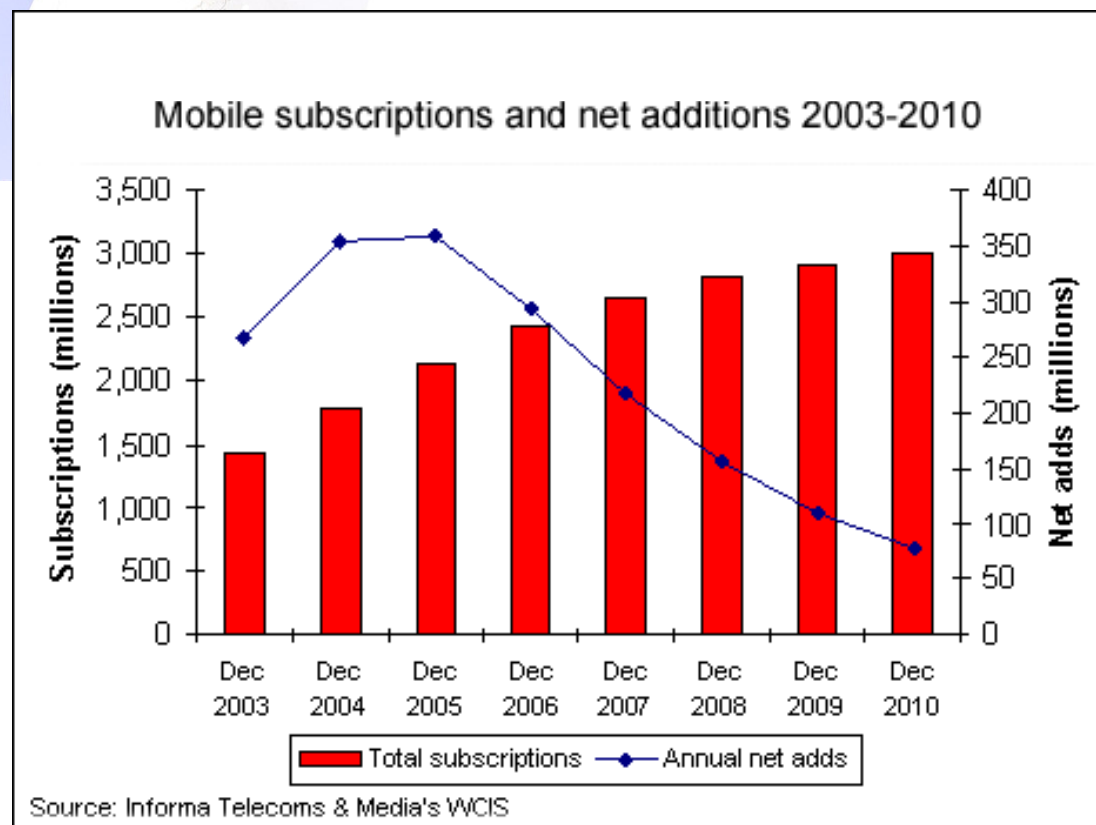
# Mobile World



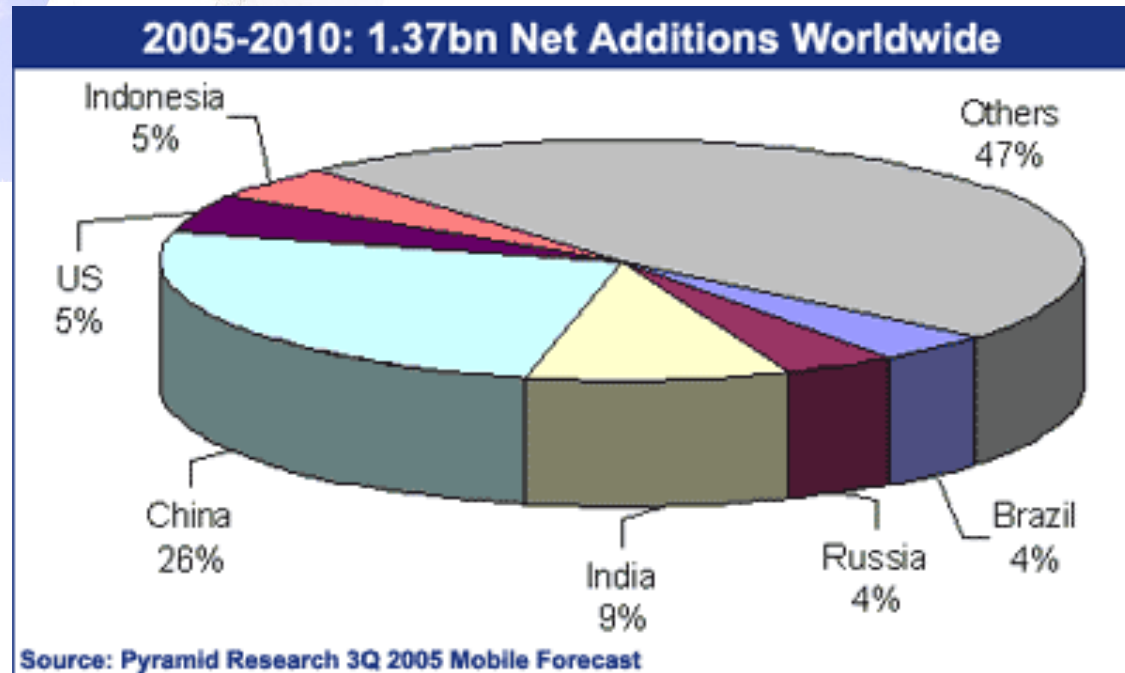
CES Innovations 2006 Awards Honorees  
Category: **Wireless Communications**  
**SCH-i730**



# Some Numbers



# Some Numbers



This growing-up market offers several opportunities for **innovations**  
- However note different market profiles



# Innovation Focus

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- Possible areas:
  - » Business (e.g., financial applications, ...)
  - » Entertainment (e.g., games, ...)
  - » Education (e.g., some kind of doubt killer)
  - » Healthy (e.g., 24 hours body monitor)
  - » ...

“Merge between areas”



# Some Hits

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- Prediction
  - » Try to predict what the market needs
- See the trends
  - » Mobility + GPS
- Expansion of current contents
  - » Not a brand-new product, but an extension of something
- Open your mind
  - » Remember someday a handset will be used in the Moon



# Competitions



**GLOBAL MOBILE CONTENT  
AWARDS 2007**  
Sheraton Grande Walkerhill, Seoul, Korea  
May 30, 2007

- **Best Mobile Game**
  - » "2006 Real Football 3D", Gameloft (France)
  - » Website: [www.gameloft.com](http://www.gameloft.com)
- **Best Mobile Music**
  - » "Jamba Music", Jamba (Germany)
  - » Website: [www.jamba.de/jcw/music](http://www.jamba.de/jcw/music)
- **Best Mobile TV & Video**
  - » "Jig Movie", Jig.jp (Japan)
  - » Website: [www.jig.jp](http://www.jig.jp)
- **Best Mobile Information**
  - » "Mobile Diabetes Management", Healthpia (Korea)
  - » Website: [www.healthpia.com](http://www.healthpia.com)
- **Best Mobile Community/Communication**
  - » "GOOVII", Green Tomato (Hong Kong)
  - » Website: [www.gtomato.com](http://www.gtomato.com)
- **Best Mobile Commerce**
  - » "CJ Mmall", CJ Home Shopping (Korea)
  - » Website: [http://company.cjmall.com/company2\\_eng/company/index.jsp](http://company.cjmall.com/company2_eng/company/index.jsp)





# Innovation Premise

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“The best way to have a good idea is to have several ideas  
and, after that, throw away the bad ones”

Linus Pauling, Nobel Price: Chemistry (1954) and Peace (1962)

How to know which are the bad ones?

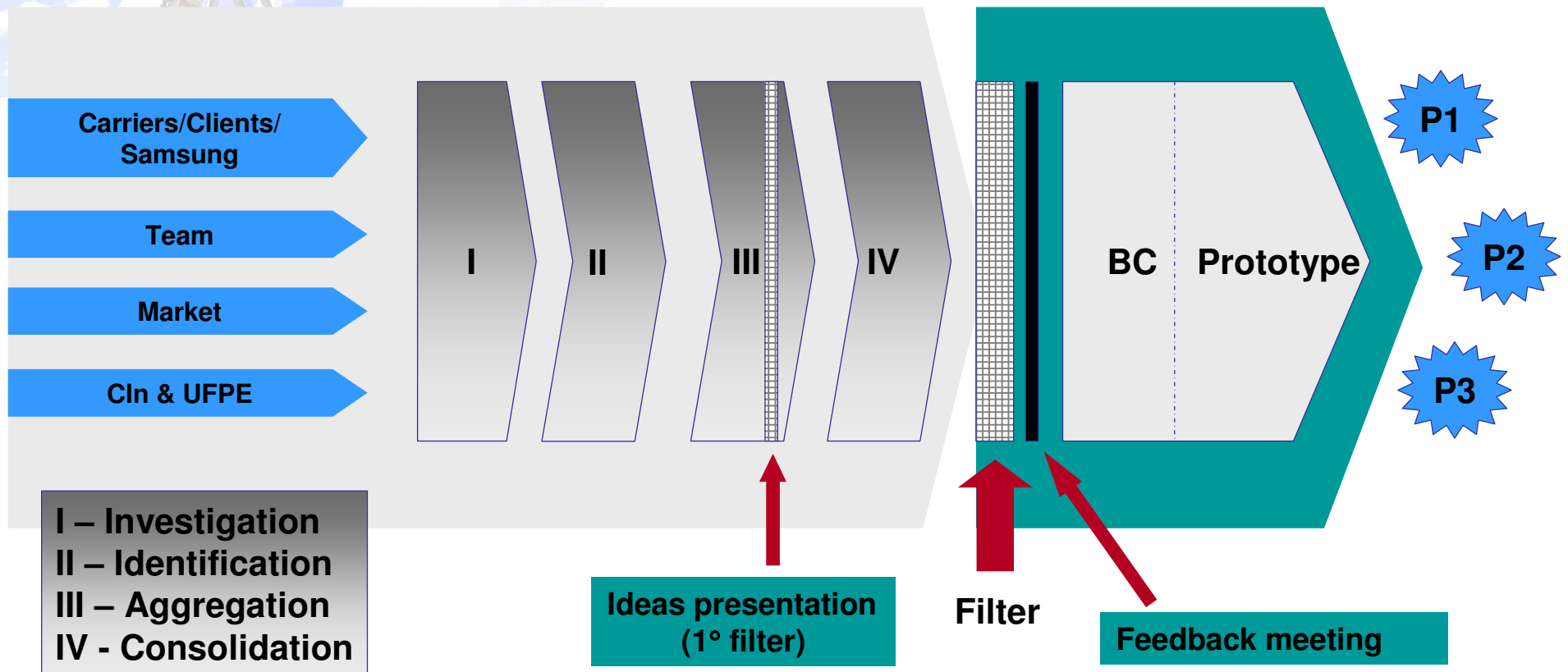




# Samsung Innovation Process



## Process in cycles



# Samsung Innovation Process

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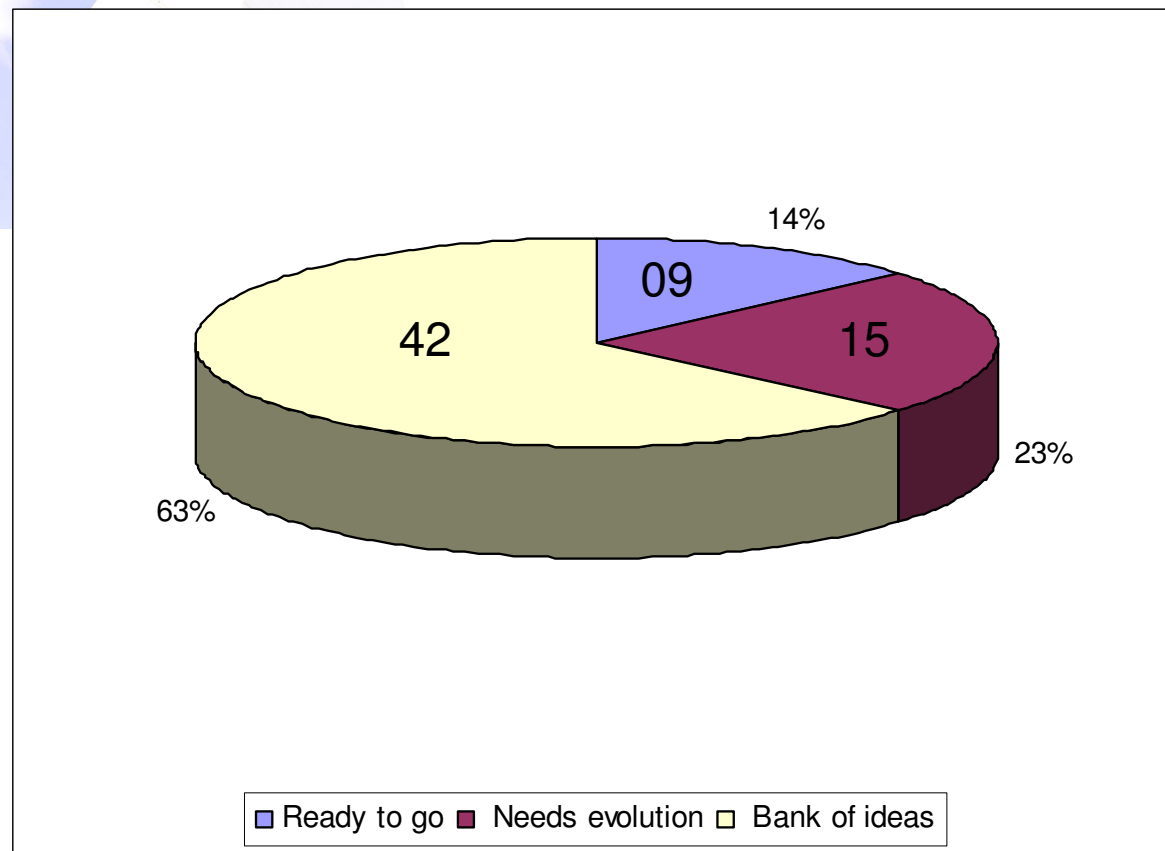


How to know which are the bad ones?

- Definition of filters:
  - » Coverage or horizontality
  - » Generation of traffic
  - » Business or Personal value
  - » Time development/release
  - » Technological restrictions



# Innovation Process (Results)



Total = 66 ideas



# Patents



- A **patent** is a set of exclusive rights granted by a state to a patentee for a fixed period of time in exchange for a disclosure of an invention
- Steps to get a patent
  - » Classification
  - » Search for evidences
  - » Specification
    - Description
    - Claims
      - *which comprises*
      - *includes*
      - *consists of*
      - *consists essentially of*

- Title
- Technical field
- Background information and prior art
- How the invention addresses the problem
- List of figures
- Detailed description of your invention
- One example of intended use

- Number of patents ([Thomas Edison](#)): 1093



# Patents



- Sp@cenet (<http://gb.espacenet.com/>)
- The European Classification system (ECLA) is used by the EPO for carrying out patent application searches. It is built on top of the International Patent Classification system (IPC), and is constantly being revised and updated. The current 8th edition of the IPC covers 70 000 groups, while ECLA covers 134 000 groups.

View Section	Find classifications(s) for keywords	Find description for a symbol
Index A B C D E F G H Y	e.g. mast sail <input type="text"/> <input type="button" value="Go"/>	e.g. A23C <input type="text"/> <input type="button" value="Go"/>

Next page: [A](#)

<b>HUMAN NECESSITIES</b>	<b>A</b> <input type="checkbox"/>
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<b>TEXTILES; PAPER</b>	<b>D</b> <input type="checkbox"/>
<b>FIXED CONSTRUCTIONS</b>	<b>E</b> <input type="checkbox"/>
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<b>PHYSICS</b>	<b>G</b> <input type="checkbox"/>
<b>ELECTRICITY</b>	<b>H</b> <input type="checkbox"/>
<b>GENERAL TAGGING OF NEW TECHNOLOGICAL DEVELOPMENTS[N0403]</b>	<b>Y</b> <input type="checkbox"/>





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# Potential New Applications



# Six Mobile Innovation Trends

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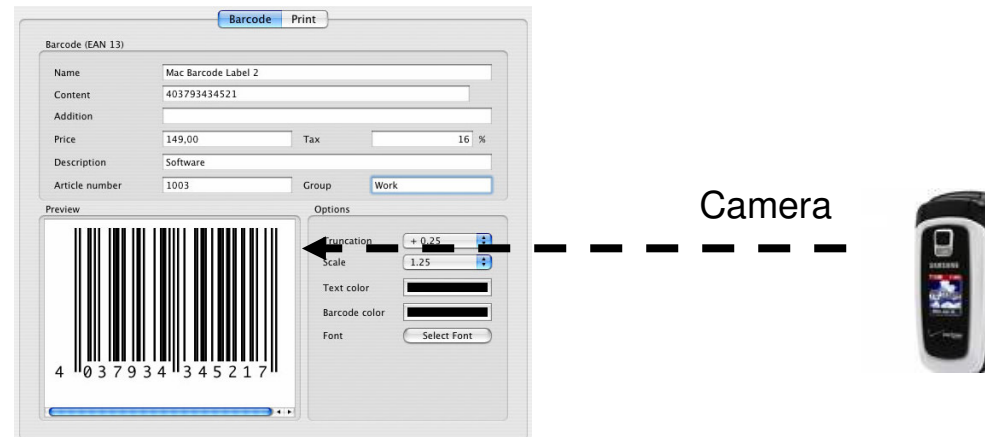
- Pay by phone
- Commanding presence
- Internet everywhere and embedded in everything
- Ubiquitous media
- Easier, better health monitoring
- Tracking of people/objects
- Map-based applications



# Pay by phone



- Phones that are expected to be introduced soon in the U.S. will use a wireless technology called Near Field Communications (NFC). You wave the phone near a point-of-sale terminal that supports the technology, and it automatically pays for the item
  - » Two approaches: call for recharging and credit-card like
- Other versions can use approaches based on barcode reading to calculate total costs and pay for them

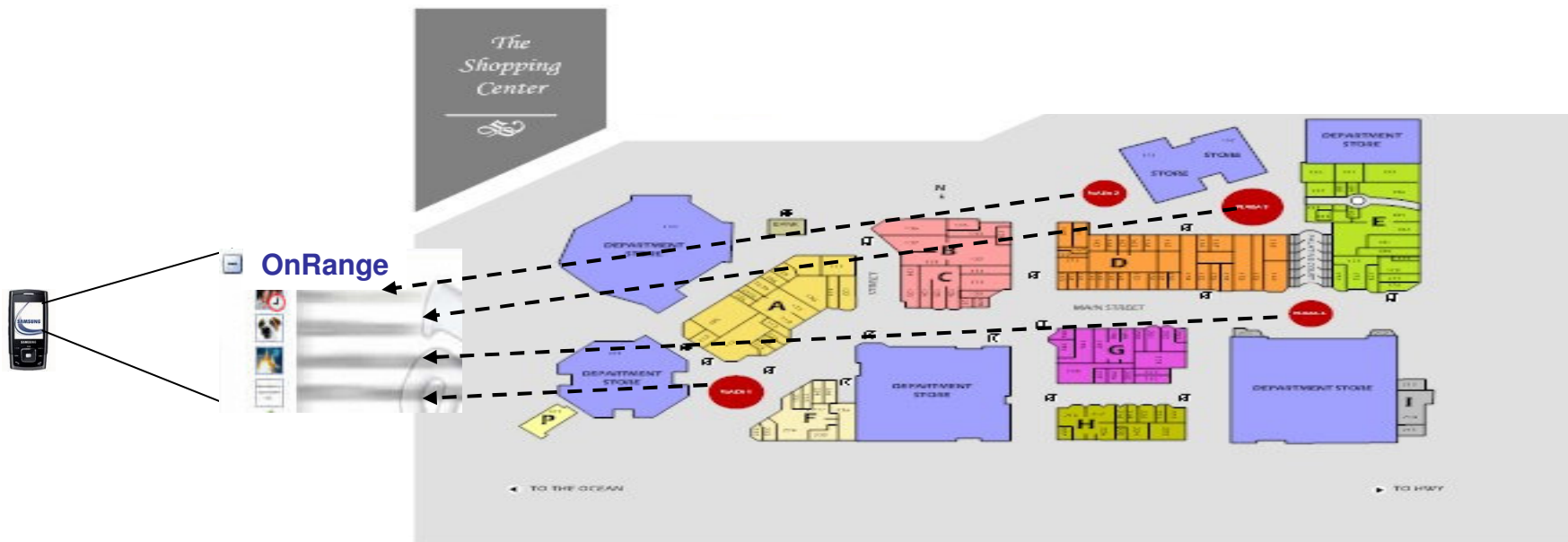




# Commanding presence



- Phones and other mobile devices will have supercharged presence capabilities that not only provide details about your availability but also help you in some activities
  - » Preferences matching, Shopping advising, ...



# Internet everywhere and embedded in everything



- Soon it won't be just desktop and laptop computers and mobile devices that will connect to the Internet. It also will be in other devices, ranging from video cameras to heating and cooling systems at home. And access will be available from virtually anywhere (e.g., [Roborior](#), [Mobile House Control](#))

Cognitive Loading



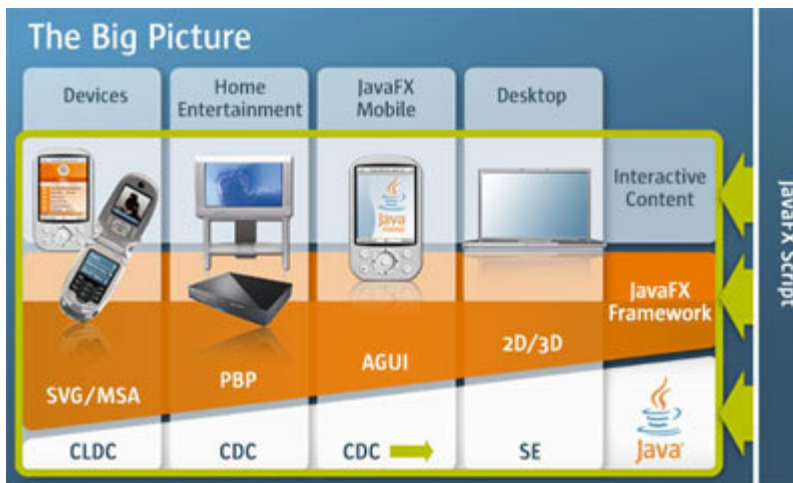
Communication Protocol



# Ubiquitous media



- Consumer demand for content on any and every device is putting content convergence on a fast track
  - » Videophone and real-time videos
  - » Three-screen vision of unified content across computer, TV and mobile devices



Source: Sun Microsystems

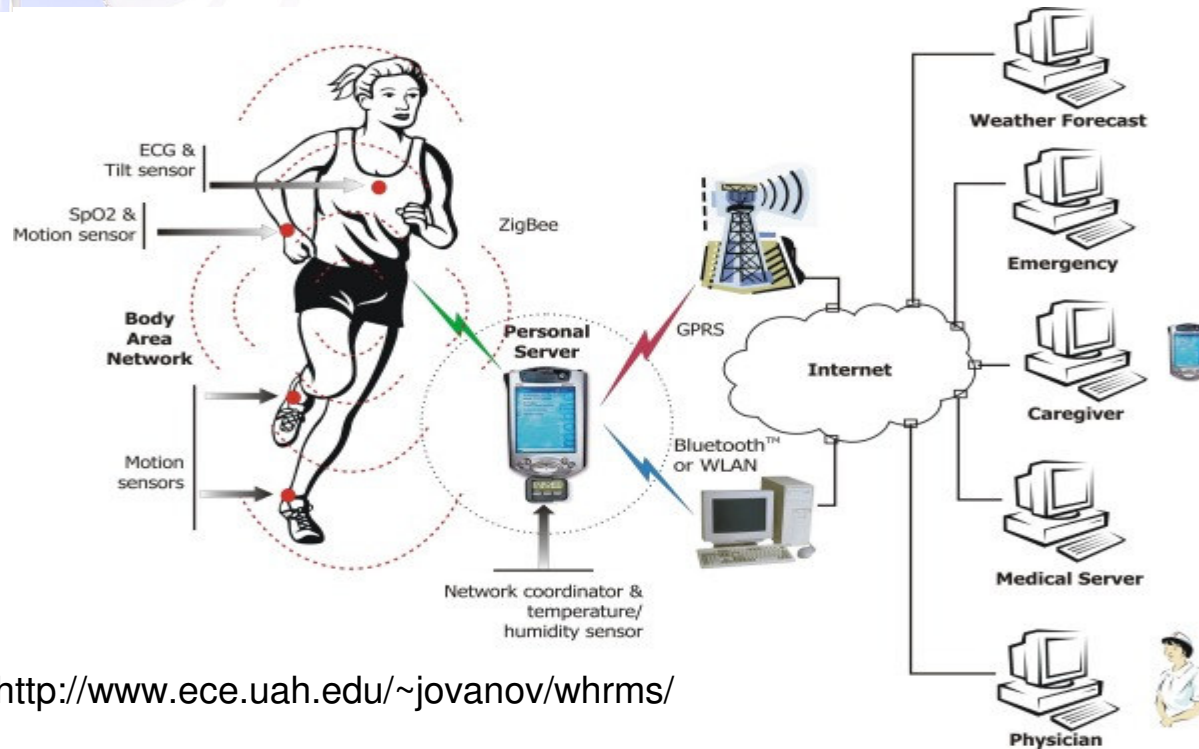
Example of solution for ubiquitous media and application delivery, provided by Sun



# Easier, better health monitoring



- Helps the monitoring of health conditions of a patient. In an extreme case, tries to predict health problems, sending calls/messages to medical centers



See: <http://www.ece.uah.edu/~jovanov/whrms/>





# Tracking of people/objects



- Ability to acquire information about positions and routes of people and objects via GPS or cells-based location mechanisms. Kids tracking is an example of application



# Map-based Applications



- Show routes to specific points, real-time traffic situation and nearby needs (gas stations, supermarkets, etc.)



# Future

