



WLAB *Wireless Ideas*

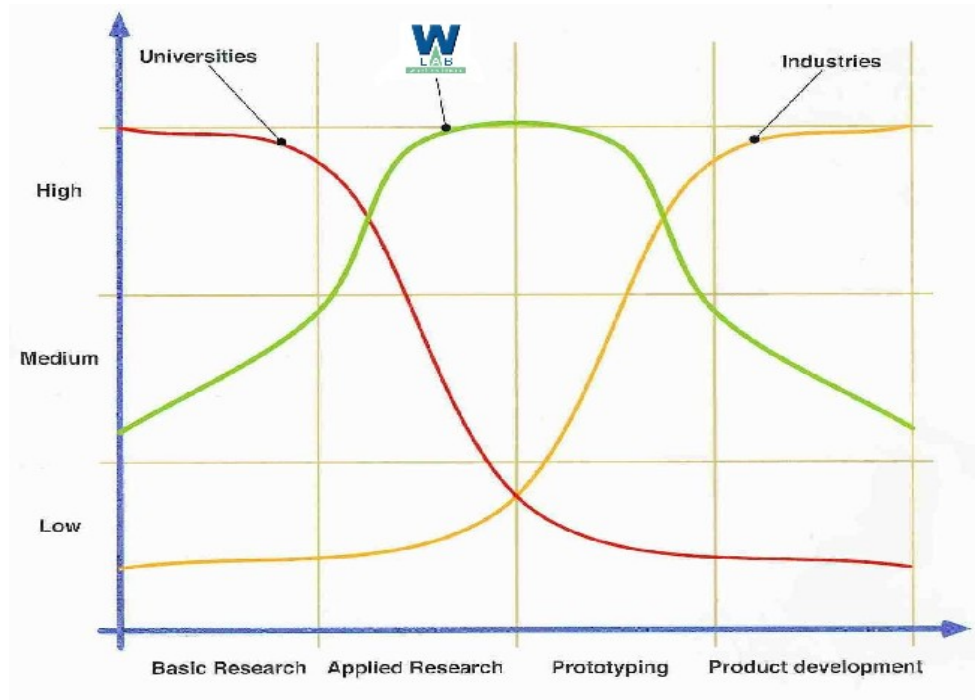
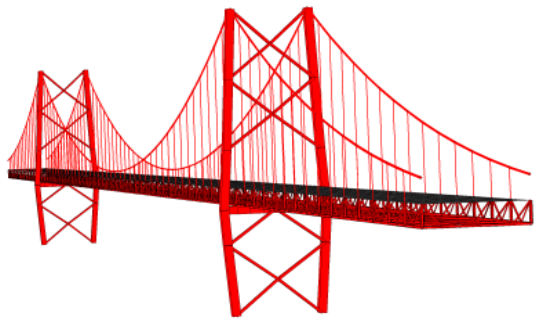
WLAB's expertise on WSN and NFC

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Ispirato a "L'innovazione Possibile" di A. Fugetta. Pearson Education 2006

RESEARCH

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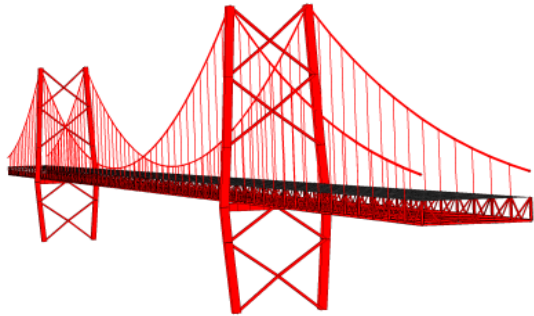
UNIVERSITÀ DEGLI STUDI DI ROMA
Tor Vergata
Università

MARKET

W
LAB
wireless ideas

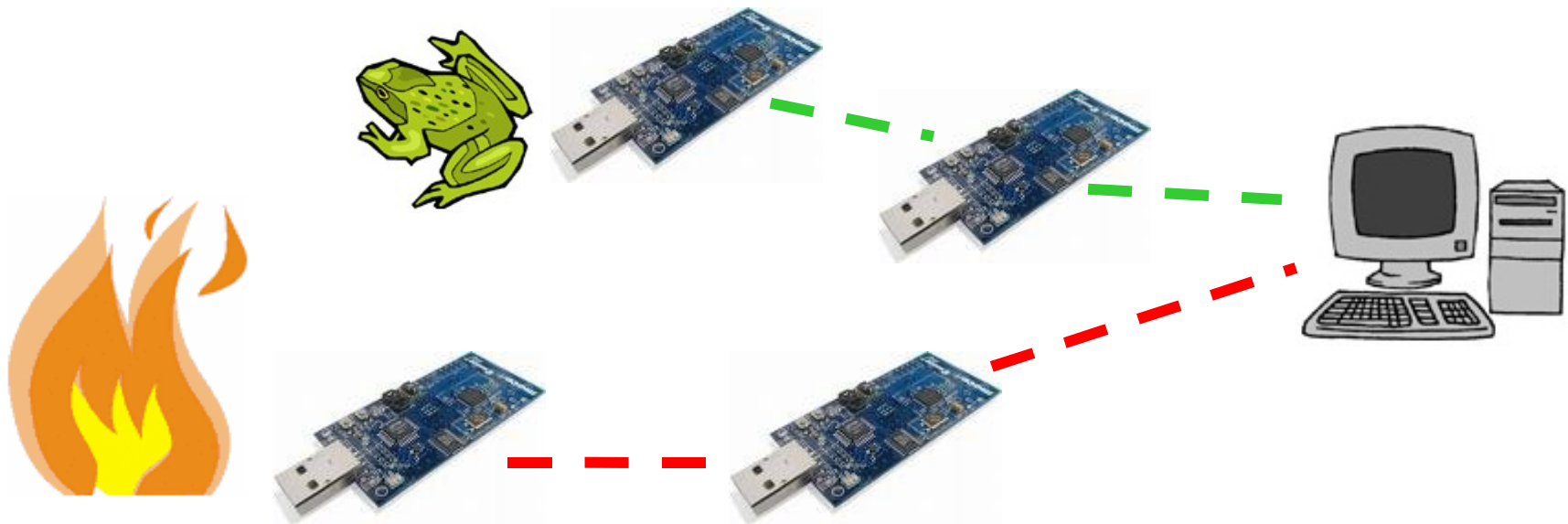
nexse



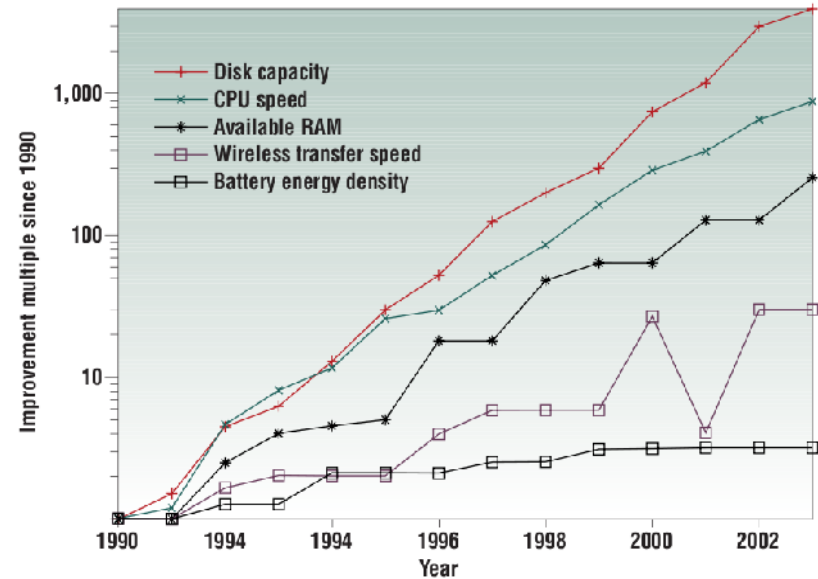
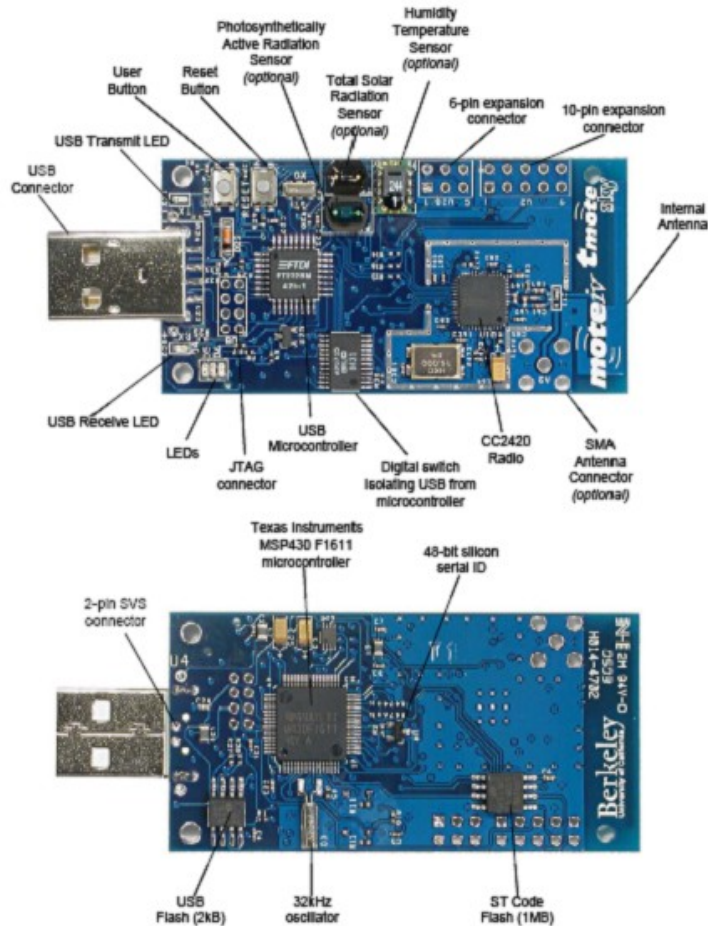


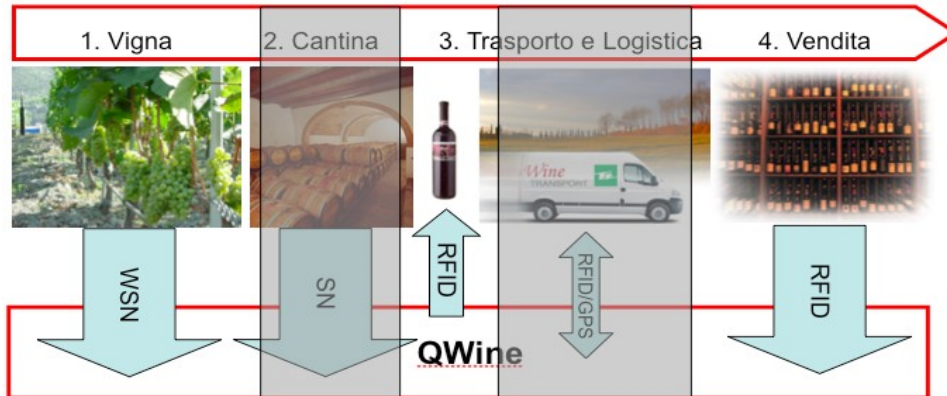
Wireless Sensor Networks(WSN)

WSNs are wireless ad-hoc multi-hop self-organizing networks made of tiny sensor nodes cooperating to monitor the environment



Sensor Nodes





Qwine

A system to support the production of wine of quality

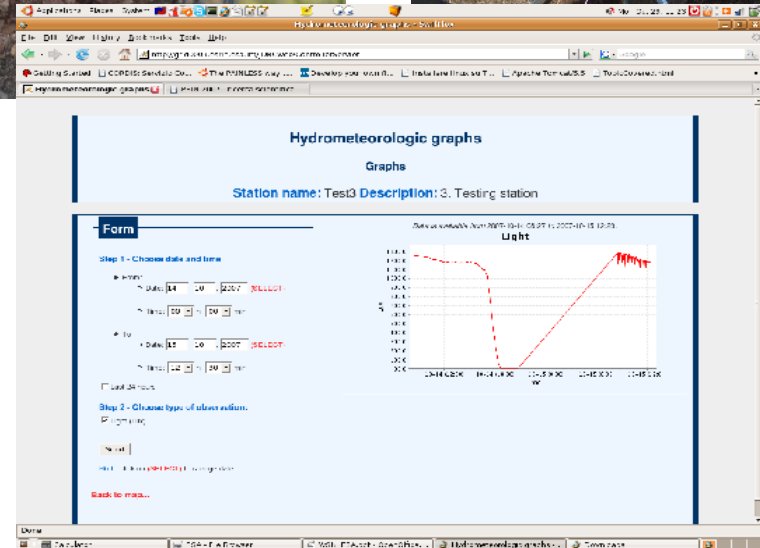
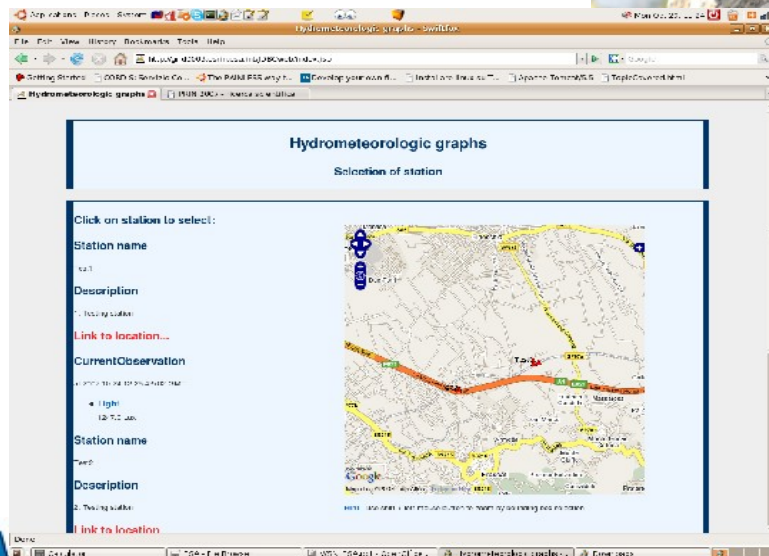


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eesa
ESRIN

WIRELESSiNFO





**Start
Cup** L'idea diventa impresa
2007

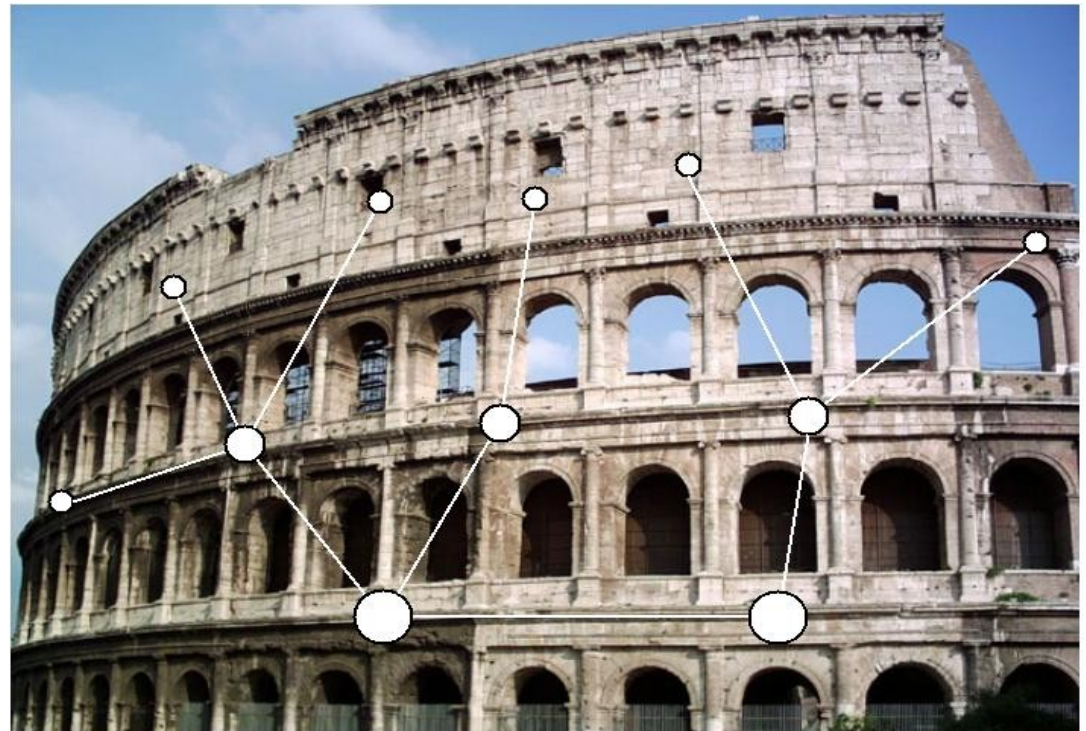
3rd classified



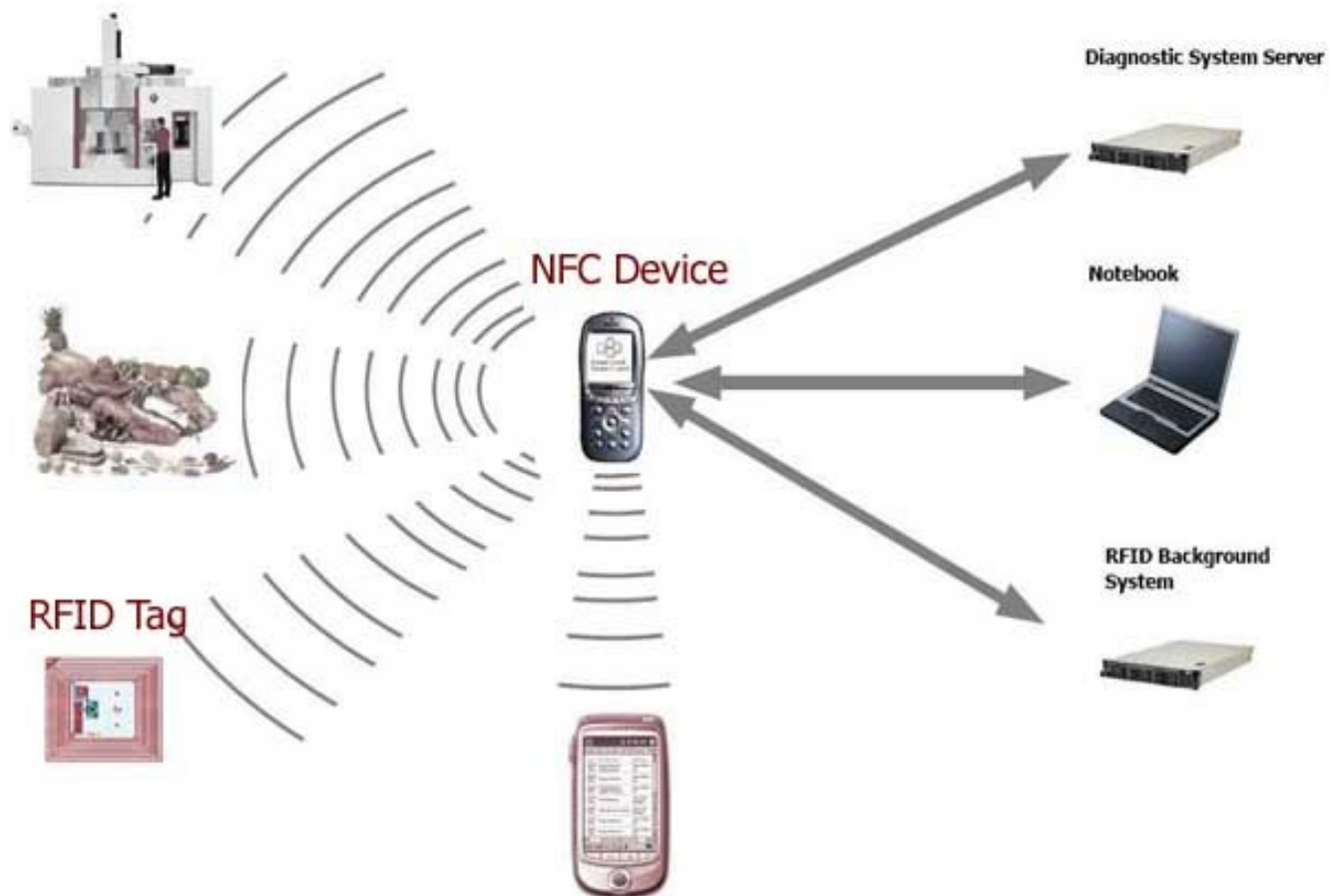
**... monitoring
critical
infrastructures**

MoHMoS

Monument's Health monitoring System



Near Field Communications (NFC)



TOSS: Touch Based Shopping Service

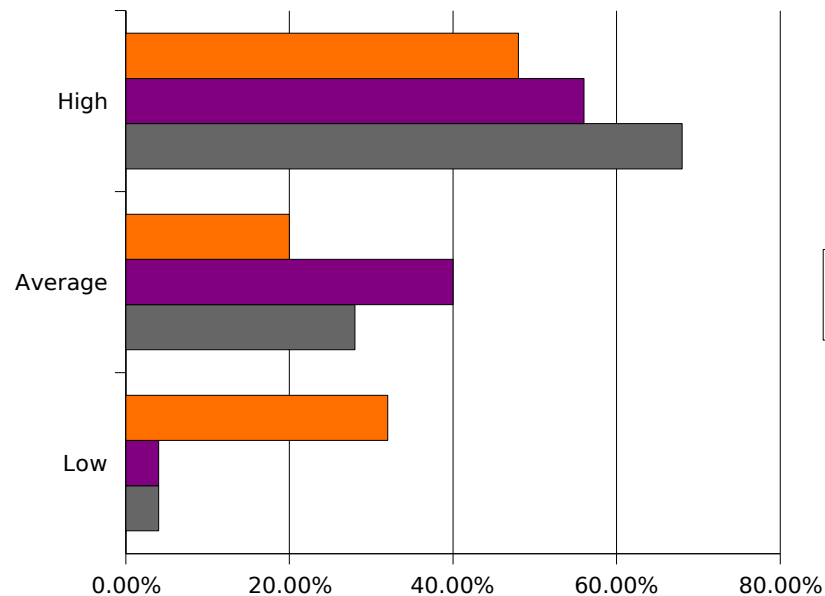
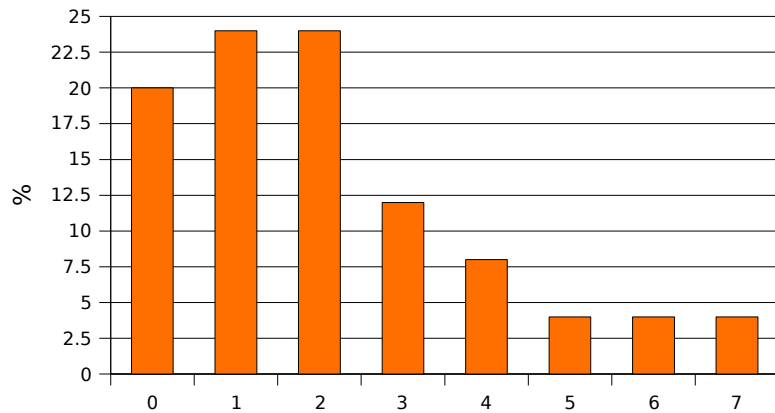


No more milk and cereals. User touches bottle and box in sequence to place the items in the shopping cart is

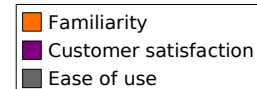
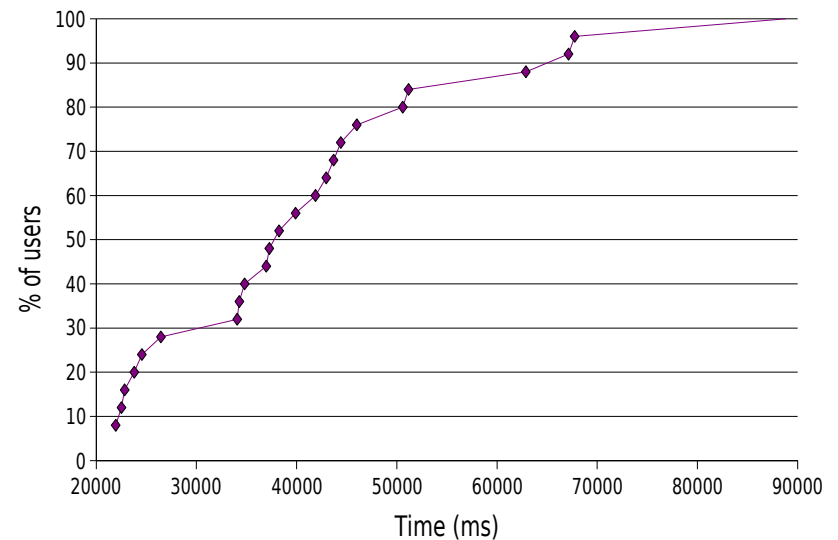
User touches the action tag on the fridge to place the order.

USER STUDY

Reading error distribution

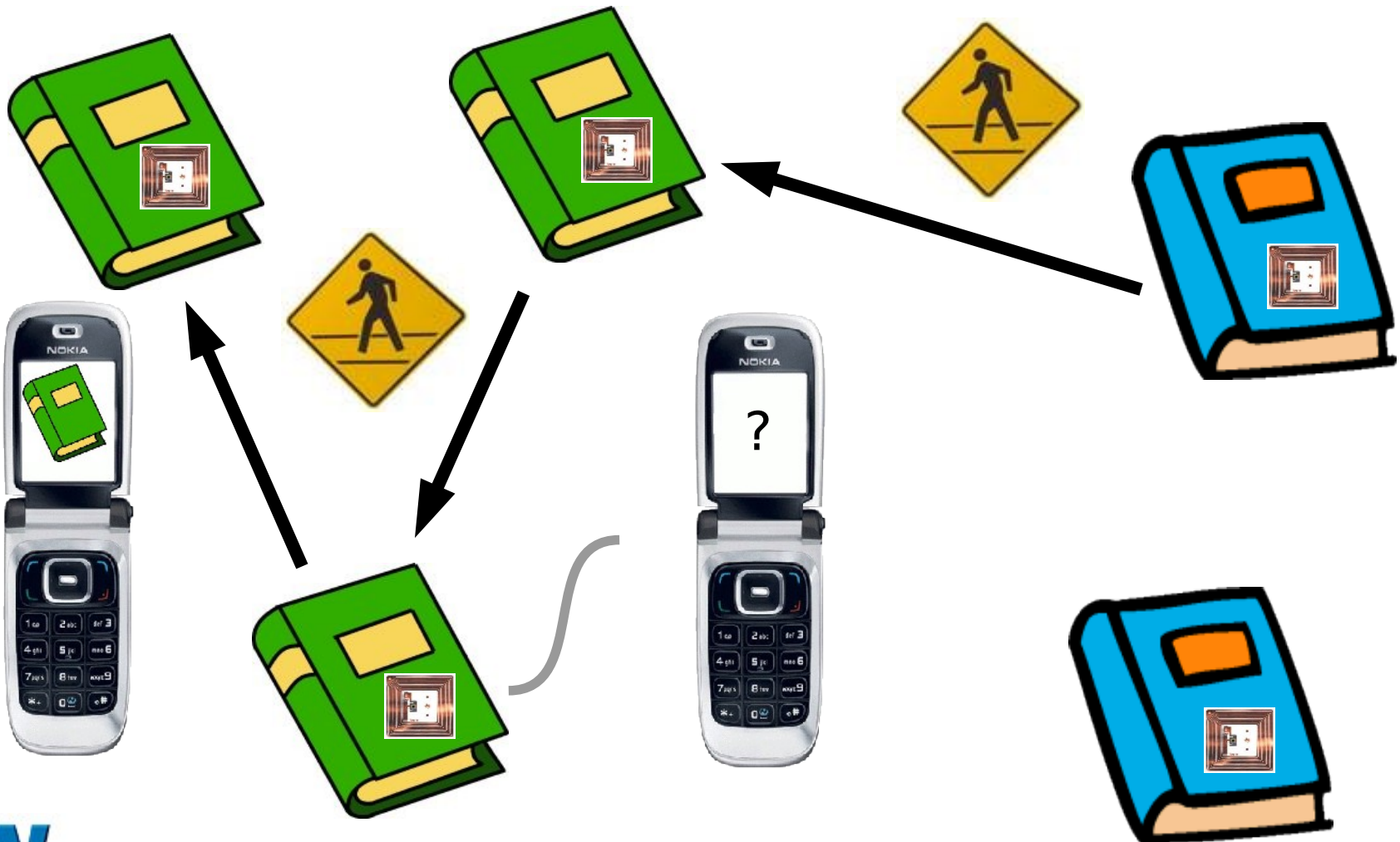


Cumulative Distribution of Completion Time



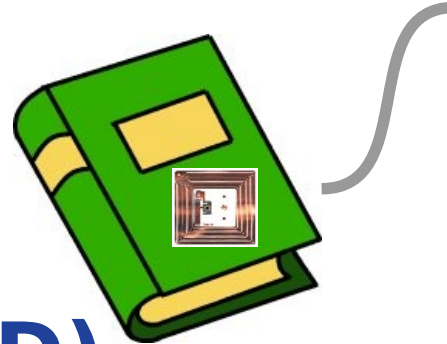
3 RND Objects

RFID Recommendation System



DATASTREAM Model

- ✓ **INPUT: n items (books)**
- ✓ **OUTPUT: f(n) (reccomendation)**
- ✓ **CONSTRAINTS:**
 - ✓ **to calculate f(n)**
 - space/time $O(\log n)$**
 - (small space on RFID)**
- ✓ **ex: Finding the missing element**



✓ **easy - space $O(n)$**

1	0	1
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1	1
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✓ **simple - space $O(\log n)$** $\sum all_{items} - \sum shown_{items}$