**AUTO-ID LABS**

Towards an Open Product Repository Using Playful Crowdsourcing

A.Budde and F.Michahelles
{abudde,fmichahelles}@ethz.ch

Information Management
Department of Management, Technology and Economics, ETH Zürich

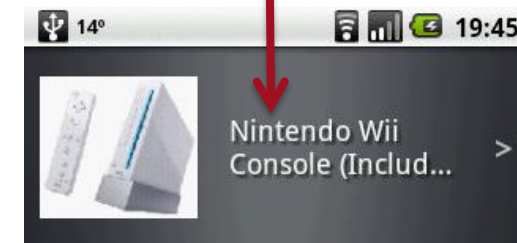
3. Workshop "Digitale Soziale Netze,, 30.September 2010



Trend: Obtain product-related Information via scanning Barcodes with Mobile Phones



Where to get this data from?



= Nintendo Wii



= Miracoli



RedLaser



CodeCheck



Google Shopper



pic2shop



SHOPSAVVY

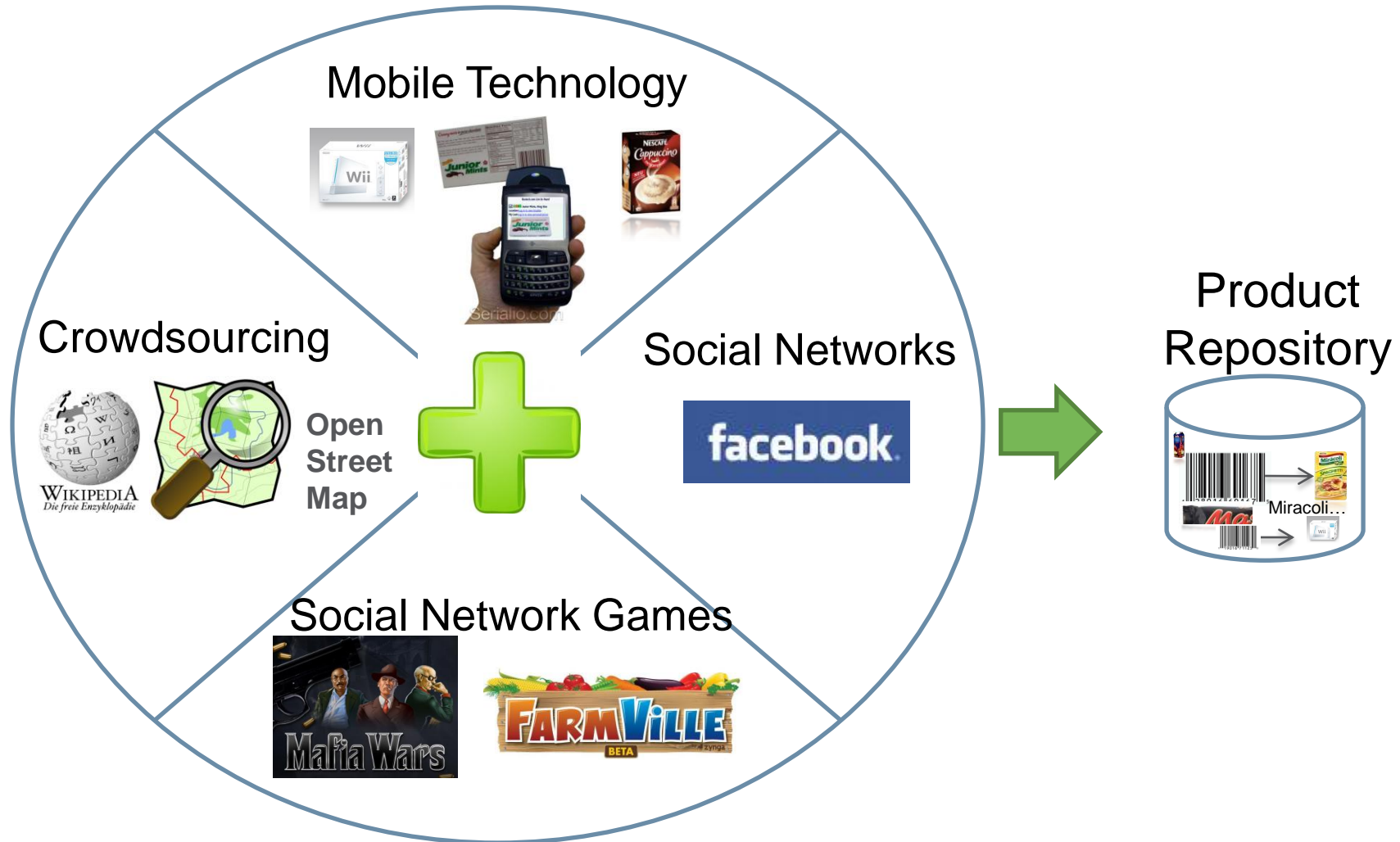


pricecheckah



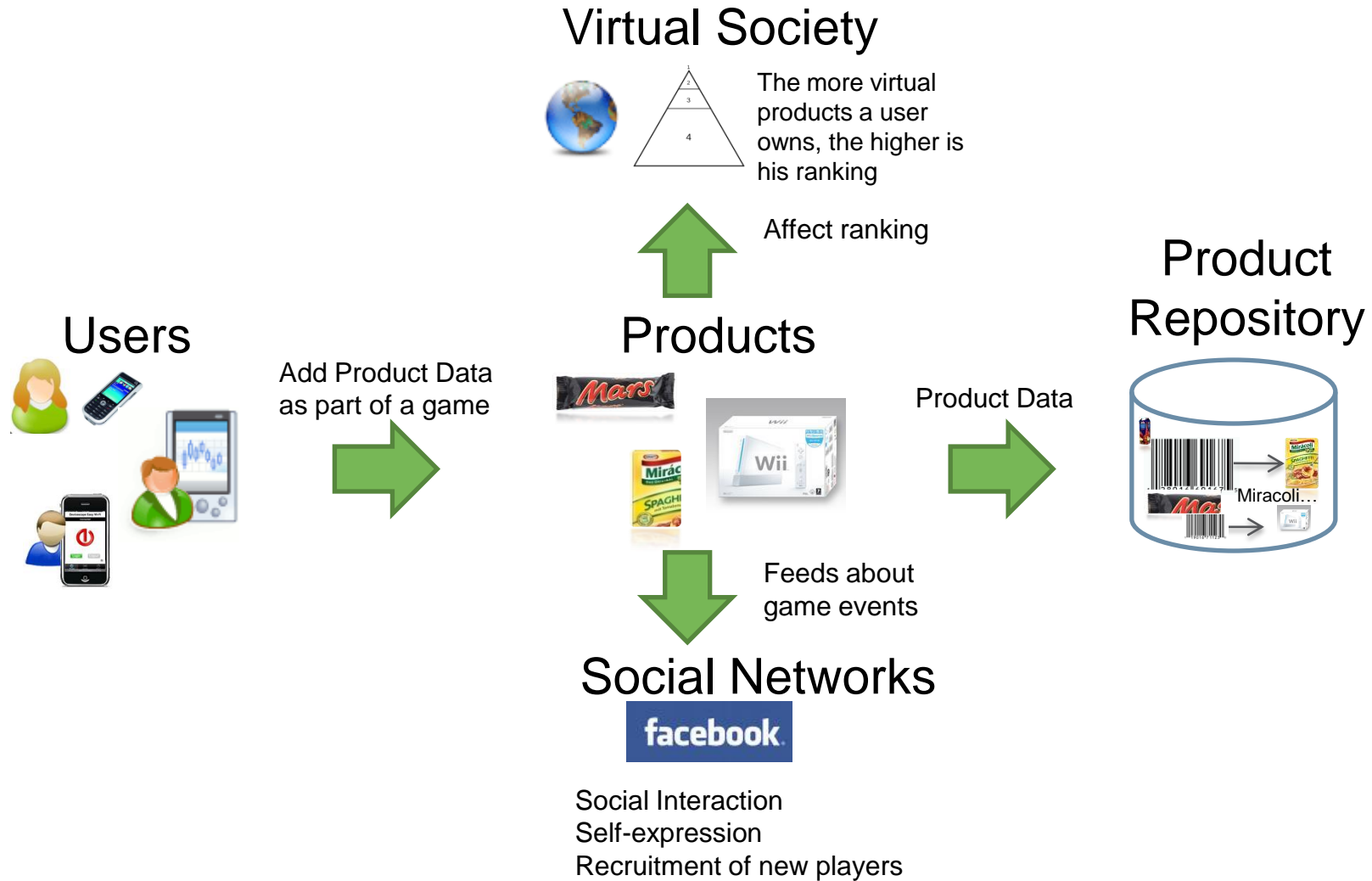


Towards an Open Product Repository Using Playful Crowdsourcing





- **Concept**
- **Implementation**
- **Evaluation**
- **Outlook**
- **Conclusion**





1. Scan Product Barcode

Brand Name:
Coop

Product name:
Ananassaft

Category:
Food

Take a photo:
Take photo

2. Enter product details



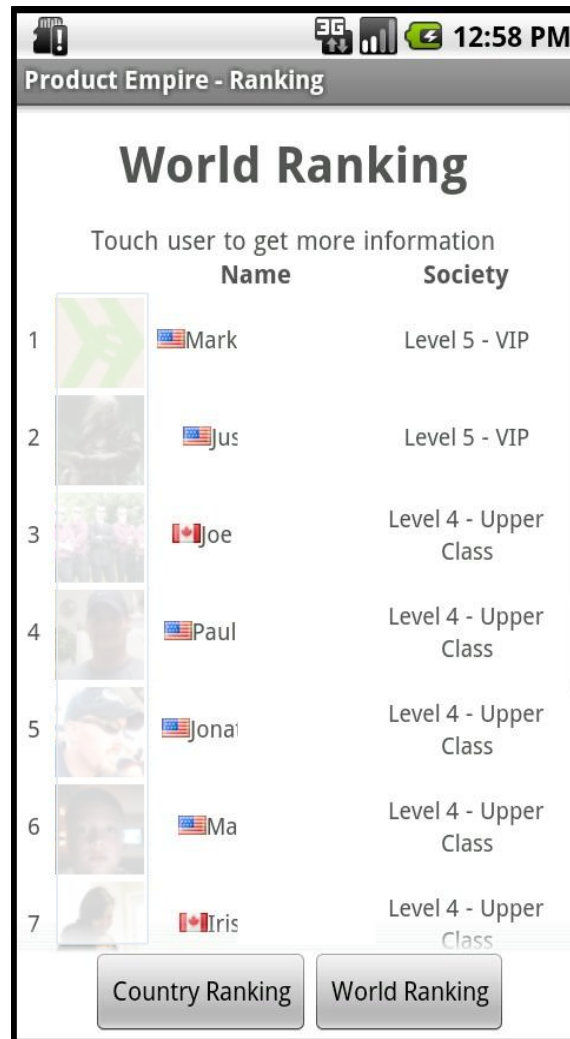
3. Upload to home base/Publish feed on facebook



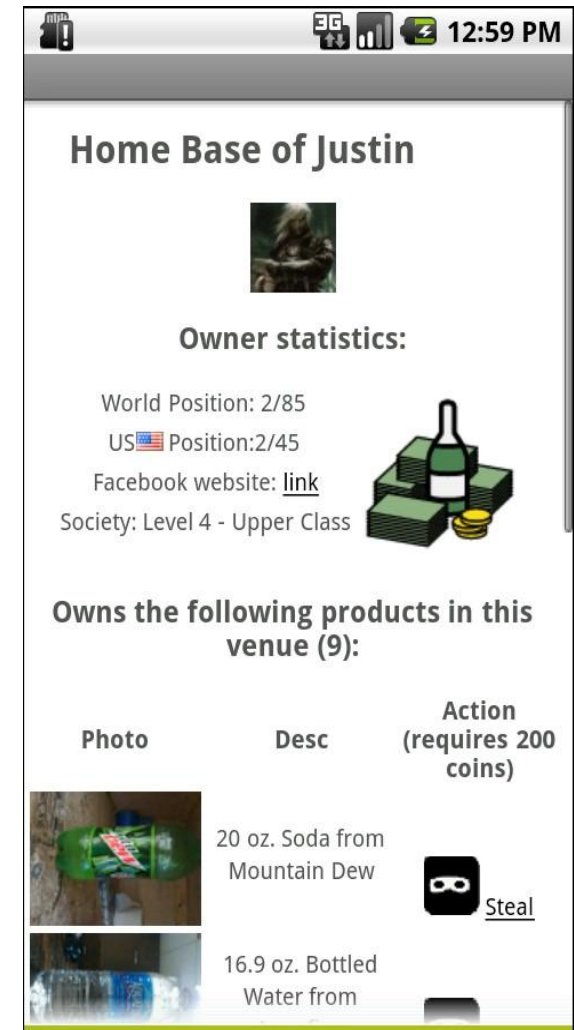
Implementation – Social Interaction



User's home bases



Ranking



User Profile



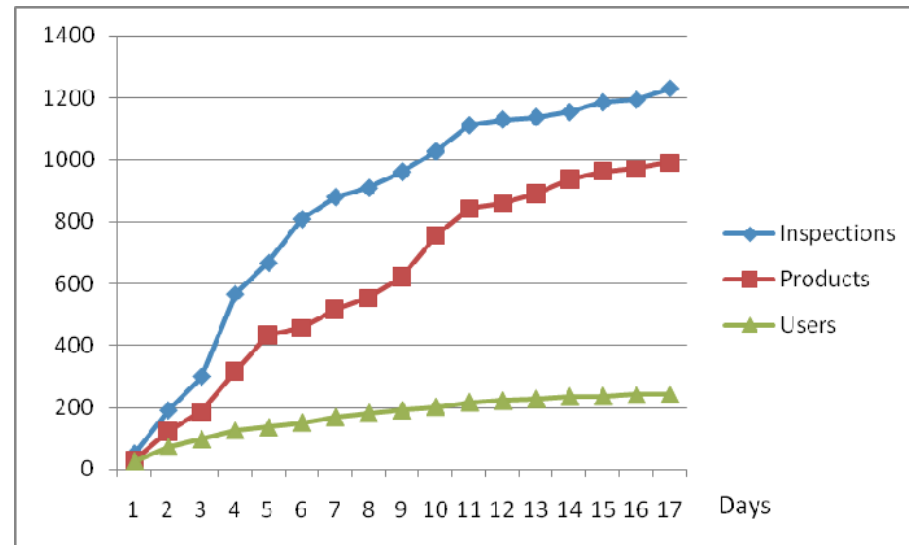
- Live Demo

- **Formative User Study**
 - Experimental Setting
 - Duration: 7 days
 - Users: 10 (working colleagues and students from Zurich)
 - Prior announced price worth 10 Euro for the best player
 - Lessons learned
 - 80 products added
 - Playful approach motivated users to add product information
 - Users enjoyed the overall game
 - Social interactions such as stealing products were enjoyed much
 - „Must scan“ as only action from the beginning was seen as a hurdle
 - Further motivational features proposed (e.g. quests)
 - Product data validation required

■ Follow-up evaluation on the **Android Market**

– Experimental Setting

- Duration: 17 days
- Users: 244
- Products: >990
- Inspections: >1230



Number of inspections, added products and users during evaluation

– Lessons Learned

- Playful approach motivates also users that do not know each other
- Peer review approach helps to detect wrong data
- Be prepared for outliers (129 products/160 inspections)



- **Adapt Ranking**
 - Avoid comparing users to far ahead users
 - Experiment with virtual achievements
 - Similar to badge-system in location-based networks such as Foursquare and Gowalla
- **Implement iPhone Version**
- **Professional design**

- **Illustrated the problem of missing barcode/product master data**
- **Presented an implemented approach to create a product repository using**
 - Crowdsourcing
 - Mobile Technology
 - Social Networks & Concepts of Social Network Games
- **Results of two evaluations showed that**
 - Users enjoyed the implemented approach
 - Playful approach motivated users to add product information
- **Reflected on future work**
 - Adapt Ranking and implement an iPhone Version with professional design



Questions?



Thank you.

More information: <http://dev.im.ethz.ch/wiki/ProductEmpire>

Visit Internet of Things Conference IoT2010, www.iot2010.org in Dec in Japan