EPROM
Entrepreneurial Programming and Research on Mobiles

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EPROM Overview

- **EPROM Aims**
  - the development of new applications for mobile phone users worldwide
  - academic research using mobile phones
  - the creation of a widely applicable mobile phone programming curriculum

- **EPROM Rational**
  - Worldwide, there are more than 2.4 billion cellphone users, with more than 1,000 new customers added every minute.
  - 59 percent of these 2.4 billion people live in developing countries, making cellphones the first telecommunications technology in history to have more users there than in the developed world.
Why Africa?

- Cellphone usage in Africa is growing almost twice as fast as any other region and jumped from 63 million users two years ago to 152 million today. (60% annually)

- Kenya
  - Stats:
    - 35 million people
    - 50% below poverty line
    - 40% unemployment
    - ~200,000 households with electricity
  - Growth:
    - 1999 -> 15,000 mobile phone subscribers.
    - 2004 -> 3.4 million subscribers
    - 2006 -> 6 million subscribers
  - Employment and Economics
    - 437,900 new jobs in the small business sector
    - 10 phones per 100 people boosts a typical developing country’s GDP growth by 0.6 %

- New Applications Emerging
  - Sambaza
  - Fisherman, Farmers, KACE
  - Community Payphone
The 3 Aspects of EPROM

- **Education**
  - Python
  - SMS Applications

- **Research**
  - Mobile Medicine
  - Call Logs

- **Entrepreneurship**
  - Partnerships
    - Cellulant, Safaricom
  - Application Deployment
  - What sticks?

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EDUCATION: Why Program Phones?

- Mobile phones are computers that are carried by over 1,000,000,000 people around the world.
- They are no longer single use devices but rather can be harnessed to provide a variety of functionalities.
- You'll be part of the first mobile phone application developers in the world.

**Stats for bottom graph made up, but probably pretty accurate**
EDUCATION: Python

- Cross Platform
- Open Source
- Successful (Google, NASA, etc)
- Scripting Language
- Extending and embedding abilities
- Good standard library
- Reasonable memory footprint
- Access to full phone functionality...

```python
import appuifw
appuifw.note(u'Hello World!')
```

Image from: Michele Marchetti, “Python brings application ideas to life” NRC 2004
EDUCATION: SMS-based Apps

- SMS Gateway
- KACE-style apps
- Stolen Car Alerts
- Business Directories
- Movies Listings
- Weather Forecasts
- Craig's List
RESEARCH: Mobile Medicine

- Demographic Survey Tool
  - 200,000 people in the Kilifi District
- Location
  - Cell-Tower / GPS
- Database Integration
  - GPRS
  - Syncing
RESEARCH: Call Log Diffusion

- **Data**
  - Call Network for the UK
    - 250 million nodes (phone #’s)
    - 5,000 edges/second (calls)

- **Objectives**
  - Diffusion of Purchasing and Churn
  - Understanding Usage Behavior
Location: Celltower ID/User-Defined Names/GPS

Proximity: Bluetooth Device Scan every 5 minutes

Communication: Phone Call/Text Log

Status: At home, traveling, sleeping, etc...

Over 450,000 hours continuous human behavior data collected over the 2004-2005 academic year.
ENTREPRENEURSHIP: App Deployment

- 'Business Plan Competition'
- Nokia Resources
- New Venture Creation Courses
- SMS Bootcamp
- Mobile Phone Programming for Entrepreneurs
- Location-based Service Deployment
- Localized Content
Get Involved

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