Developing Economies of Scale in mHealth

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About Dimagi

Dimagi delivers open and innovative technology to underserved communities everywhere.
About Dimagi

- Develop open source mobile and web tools for low-resource settings
- 12 years experience implementing 300+ ICT projects with over 100 partners
- Collaborative model where Dimagi partners with implementing organizations
- 100+ person team in Cambridge, New Delhi, Cape Town, Maputo, Dakar
- Fast growing (190+ active projects, 140% project growth in last year)
About MOTECH Suite

- Collaborative effort to provide a foundation for mServices at scale, through combination of open source technologies and implementation support.
- Draws on large scale implementations, e.g., in India, Ghana, and Malawi
- Developed and led by Dimagi and the Grameen Foundation
- Partnering with many organizations, including World Vision in 11+ countries

**mServices for FLWs (CommCare)**

- Job aids for CHWs
- Supply chain
- Demand creation

**Integration & Orchestration (MOTECH)**

- Integration of mServices apps to national information systems, e.g., DHIS2.0
- Scheduling and workflow
Stakeholders in Community Health Programs

- **MoH (Ministry of Health)**
- **NGO (Implementer)**
  - **Program (e.g., MCH)**
    - CHWs
  - **Program (e.g., malaria)**
    - CHWs
  - **Implementer**

**CHWs**
Challenges in Scaling mHealth

- Community health programs = proven impact when well-run and efficient
  - Also face enormous challenges in scale and complexity
- mHealth improves CHPs’ impact across a number of use cases
  - But hasn’t scaled because single use-case approaches aren’t creating scale efficiencies, leading to mHealth pilotitis
  - Achieving user scale is an important goal, but have to also achieve program and vertical scale
Three paths to scale mHealth impact

USER EXPANSION:
Adding more users (both CHWs and supervisors)
Three paths to scale mHealth impact

1. USER EXPANSION: Adding more users (both CHWs and supervisors)

2. PROGRAM EXPANSION: Adding new programs (e.g. a new malaria app)
Three paths to scale mHealth impact

**USER EXPANSION:**
Adding more users (both CHWs and supervisors)

**PROGRAM EXPANSION:**
Adding new programs (e.g. a new malaria app)

**VERTICAL EXPANSION:**
Adding value to existing programs. This leads to better control through systems integration, and increased program effectiveness
Path 1: User Expansion

**Definition:** adding more users to a program (be it CHWs, supervisors, etc.)

**CASE STUDY**

John Snow International in Tanzania

- USAID & MoH adopted CommTrack in 2008
- Goal to improve supply chain decision making through mobile tools
- **Grew from pilot** to 4,600+ facilities; currently **scaling nationally**
- **Able to scale** because cost-effective to add users
Path 2: Program Expansion

**Definition:** Leveraging an existing mHealth platform to tackle another use case.

**CASE STUDY**

TulaSalud in Guatemala

- 200 CHWs adopted CommCare in 2012
- Application designed to help CHWs better manage high-risk pregnancies
- Expanded application to include *malaria* modules, and planning to add *malnutrition* modules
- **Able to scale because** org became very familiar with CommCare platform
Path 3: Vertical Expansion & Systems Integration

**Definition:** Integrating an mHealth program into mHealth systems at both the implementer and district/national partners levels, including the MoH.

**CASE STUDY**

CARE in Bihar, India

- Deployed MOTECH Suite for MNCH + nutrition in Bihar, India
- Successfully demonstrated **CommCare integration** with Mother and Child Tracking System (MCTS)
- **Able to scale because** program had vision of integration from Day 1
## Economies of scale in mHealth Expansion

<table>
<thead>
<tr>
<th>Expansion Type</th>
<th>Fixed costs (≡ levers for economies of scale)</th>
<th>Variable costs (≡ increase with variable metric)</th>
<th>Variable metric</th>
</tr>
</thead>
</table>
| **1 User expansion**    | • Office equipment & facilities  
                          • Existing trained staff & managers  
                          • Programmatic content  
                          • Part of data management  
                          • Phone replacement policy | • Mobile Phones  
                          • Voice & plan for phones  
                          • Initial & annual trainings  
                          • Incremental supervisors & field staff salaries  
                          • Software & data hosting | • # CHW |
| **2 Program expansion** | • Field & supervisors staff  
                          • Some part of training  
                          • Mobile phones & software hosting  
                          • Office equipment & facilities  
                          • Field visit costs | • Programmatic content  
                          • Ongoing training  
                          • Software & data hosting  
                          • Management time to analyze data | • # programs |
| **3 Vertical expansion**| • Initial upfront systems integration  
                          • Data Management & Reporting systems  
                          • Political onboarding | • Systems maintenance | • N/A |
Economies of scale in mHealth expansion

**Total Cost per CHW**

1. **User expansion**
   - Cost/CHW with increasing users (500-1000 CHWs)
   - 100% 40% 36% 35% 33%
   - 500 users 600 users 700 users 800 users 900 users

2. **Program expansion**
   - Cost/CHW with increasing programs (500 CHWs)
   - 100% 34% 23% 17% 16%
   - # of Programs
   - 1 2 3 4 5

3. **Vertical + Program expansion**
   - Cost/CHW with Vertical integration & increasing programs (500 CHWs)
   - 100% 127% 27% 21% 20%
   - 1 2 3 4 5

4. **Vertical + Program + User expansion**
   - Cost/CHW with Expansions
   - 100% 127% 23% 20% 19%
   - (500 CHW) (500 CHW) (1000 CHW) (1000 CHW) (1000 CHW)
What kind of technology do you need to insure that your program is achieving economies of scale?

**Cloud Product**: software that is hosted by a software provider and made available through a public website.
- Allows users to do everything necessary through a public website (e.g. Facebook, Dropbox)
- Necessary for *user expansion*

**Advanced Workflows** give mobile tools the ability to track people and entities over time
- Includes complex branching logic and rules for parsing and responding to messages
- Necessary for *program expansion*

Software is **Open Source** if it is made freely available and can be redistributed and modified.
- Beneficial is a project is going to scale, or if there is need to transfer the technology to government or local ownership
- Necessary for *vertical expansion*
Core elements to achieve all three scale paths

- Cloud Product
  - Many others
  - No others

- Open Source
  - A few others
  - Several others

- Complex Workflows
  - Several others
Jonathan’s blog post of this presentation: http://www.dimagi.com/three-ways-to-achieve-economies-of-scale-in-mhealth

Upcoming NetHope Webinars for MOTECH Suite series:
December 16th, 2014: World Vision recap of deploying MOTECH Suite in 11 countries (Sherrie Sims)
January 22nd, 2015: “A Case Study on Integrating mServices with National Information Systems” (John Tippett and Jonathan Jackson)

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