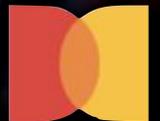


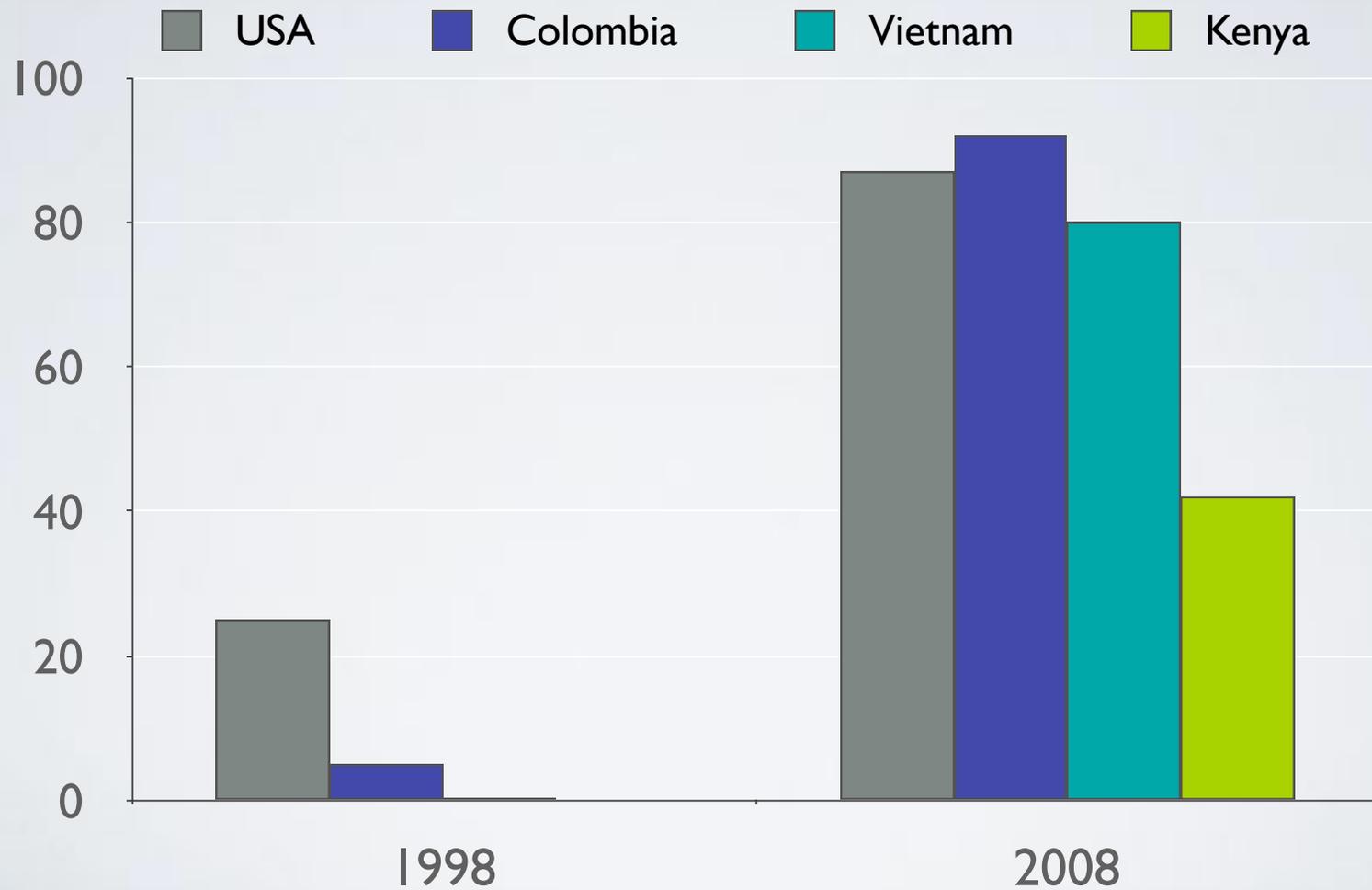
USING THE WEB/ MOBILE REVOLUTION

How to build really sustained, truly scaled software capacity for countries rich and poor

Joel Selanikio, MD
CEO and co-founder, DataDyne.org



Mobile Phone Penetration



Mobile Phone Penetration

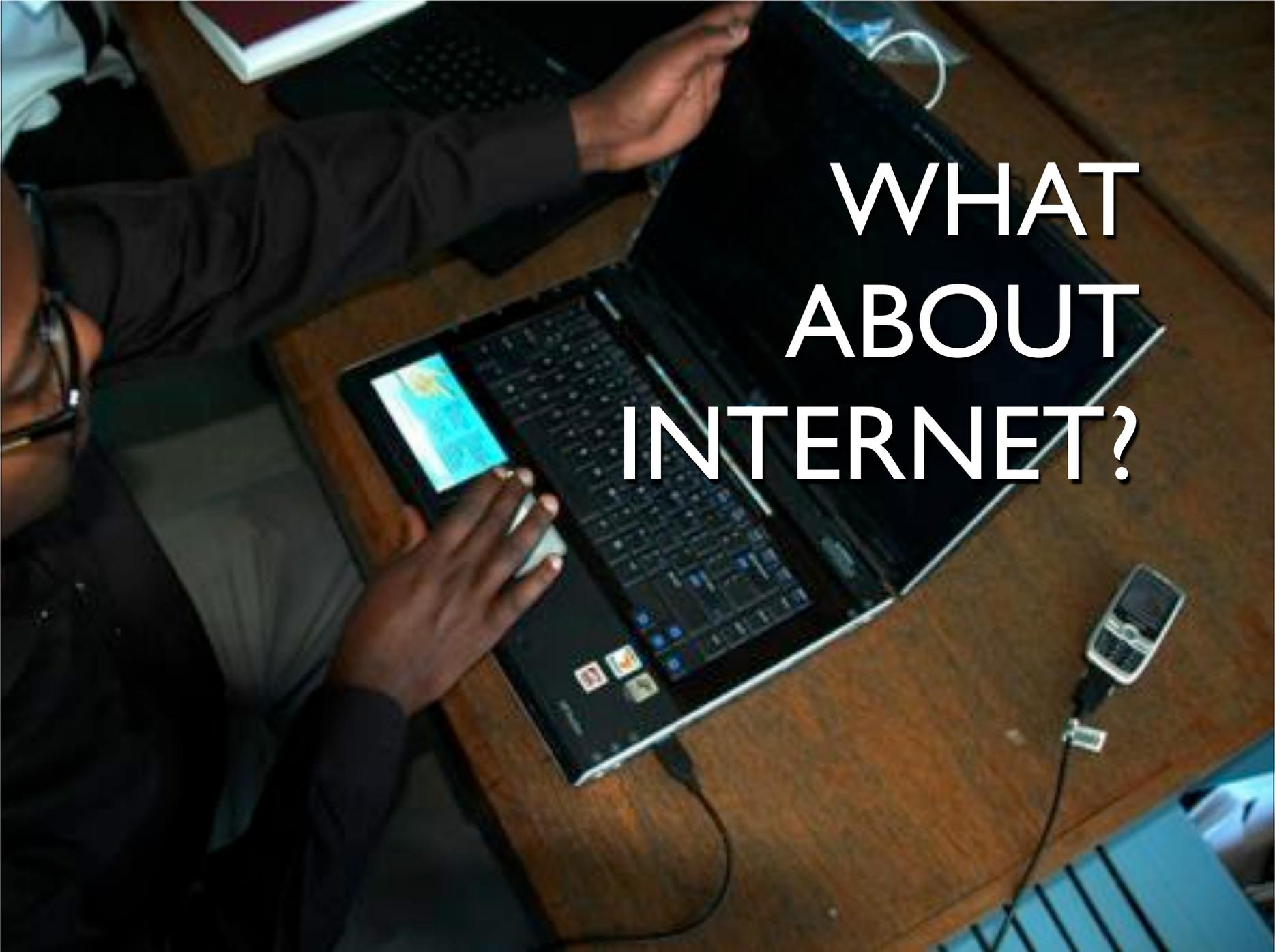


Developing countries
are “leapfrogging”
over landlines straight
to mobile phones
and over laptops straight
to mobile computers



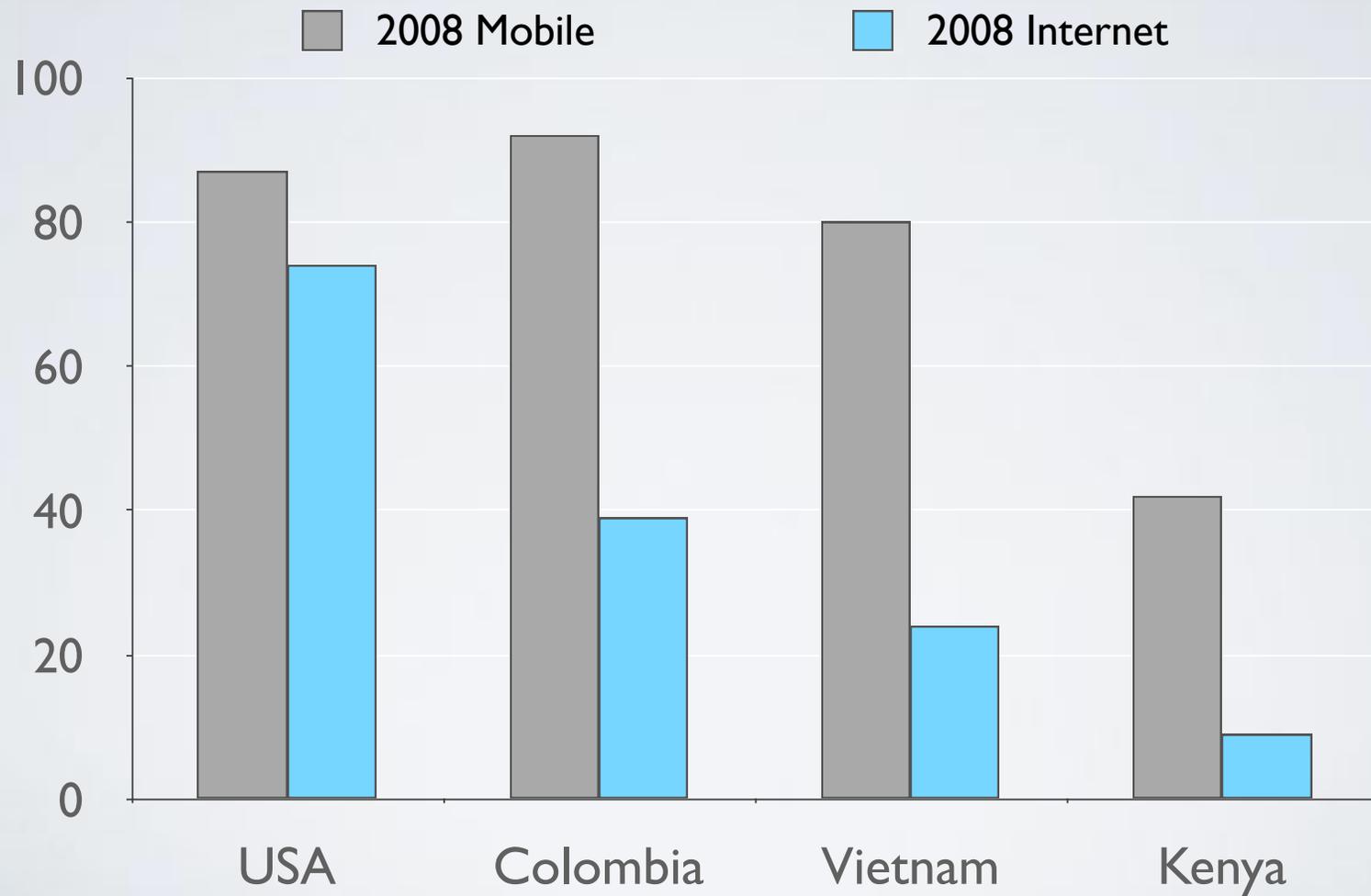
The mobile revolution is a
revolution in **computing**,
not just in telephony
**which means it is a
revolution in access to
information**



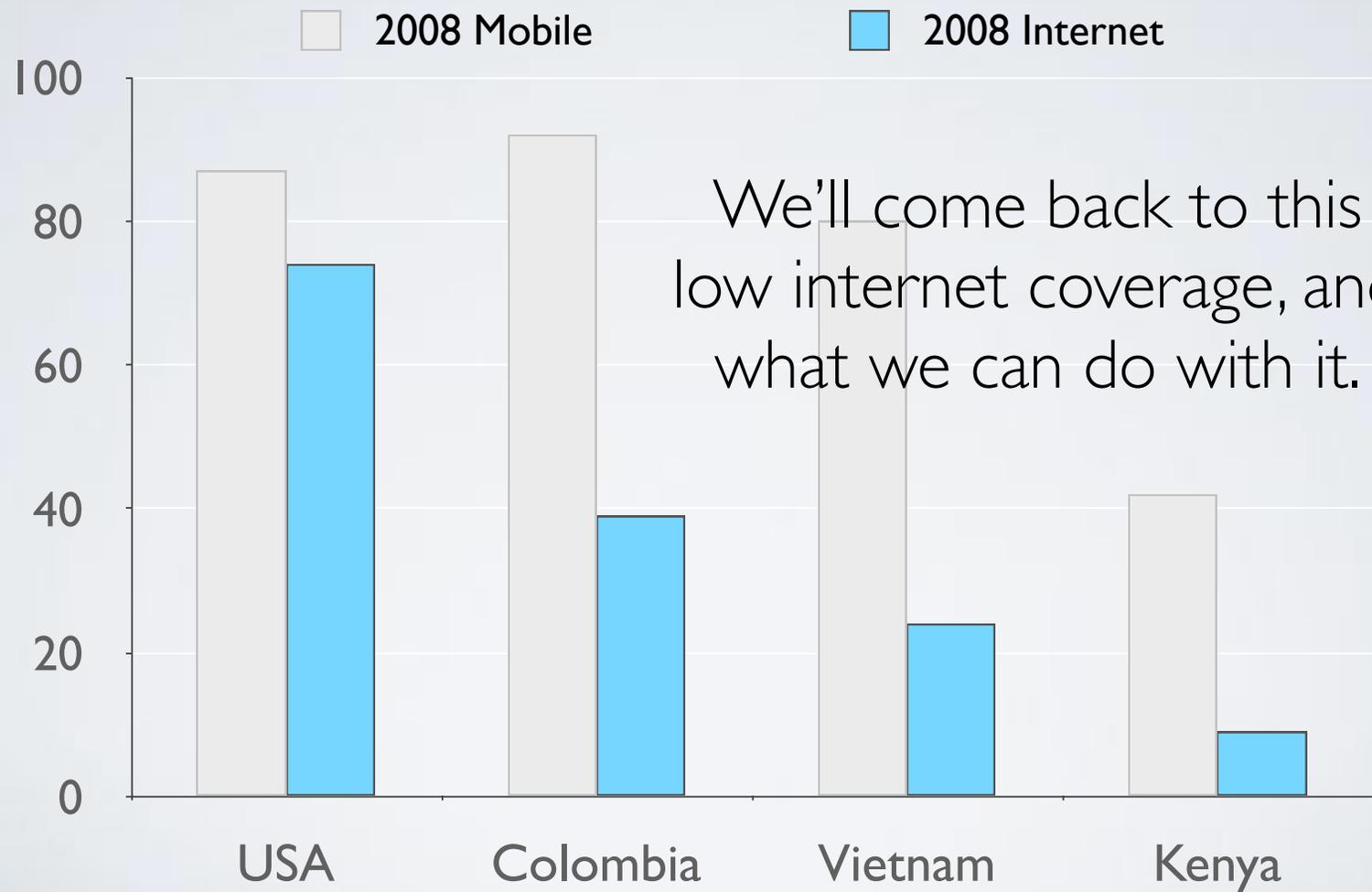
A high-angle photograph of a person sitting at a wooden desk, using a laptop. A tablet is attached to the left side of the laptop, displaying a blue and white interface. The person's hands are visible, interacting with the tablet. To the right of the laptop, a mobile phone is connected to a charging dock. The text "WHAT ABOUT INTERNET?" is overlaid in large, white, bold, sans-serif font on the right side of the image.

WHAT ABOUT INTERNET?

Mobile and Internet Now



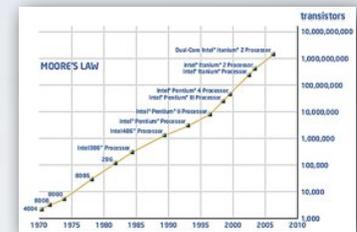
Mobile and Internet Now



How did mobile happen?



Memory & Moore's Law

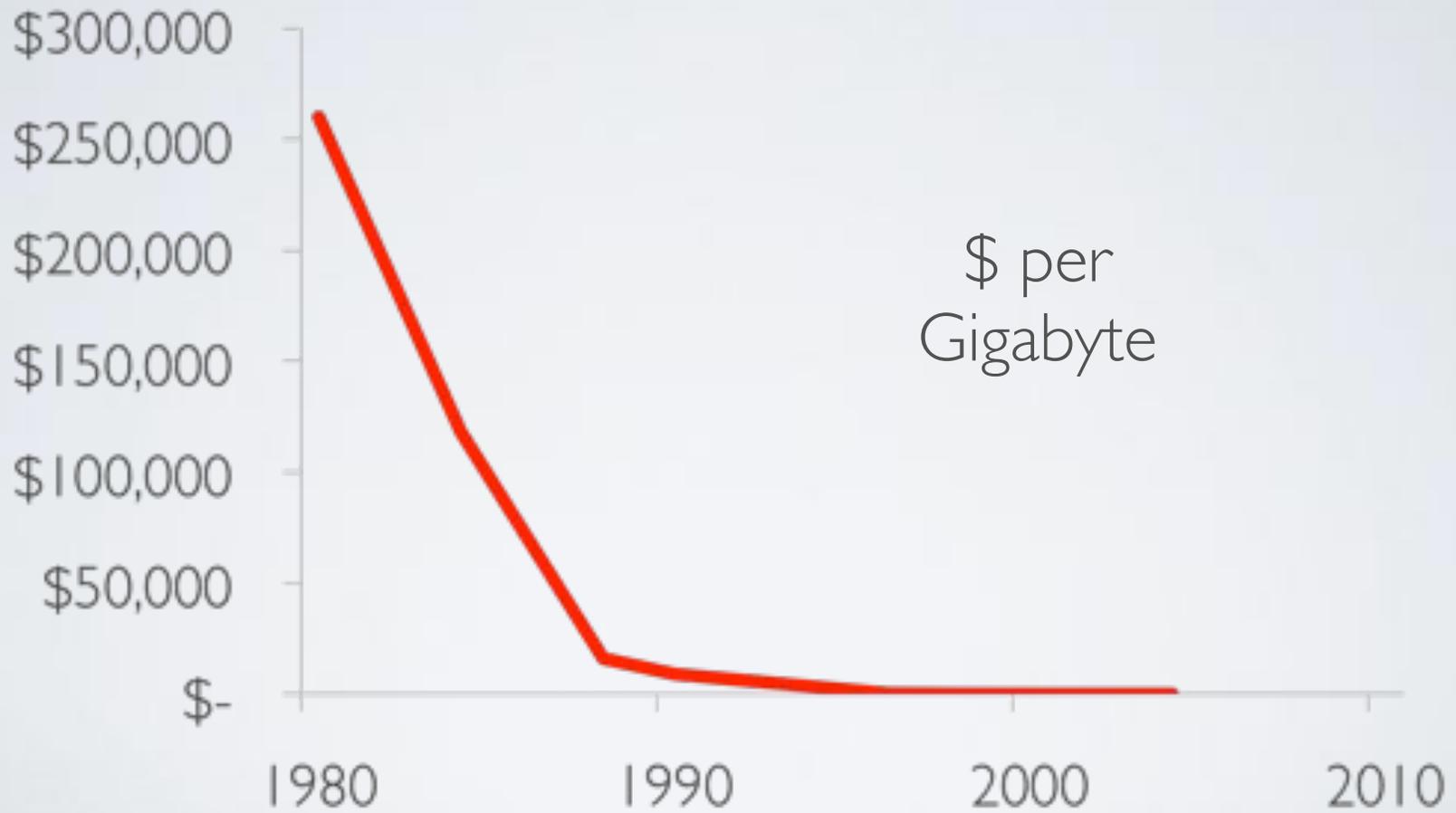


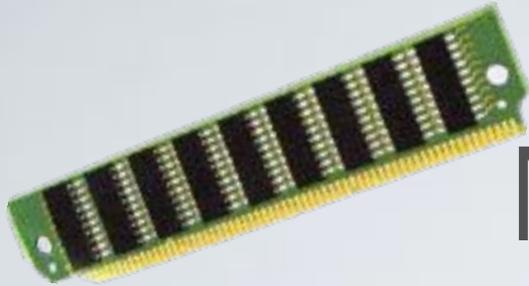
A miracle of financial engineering



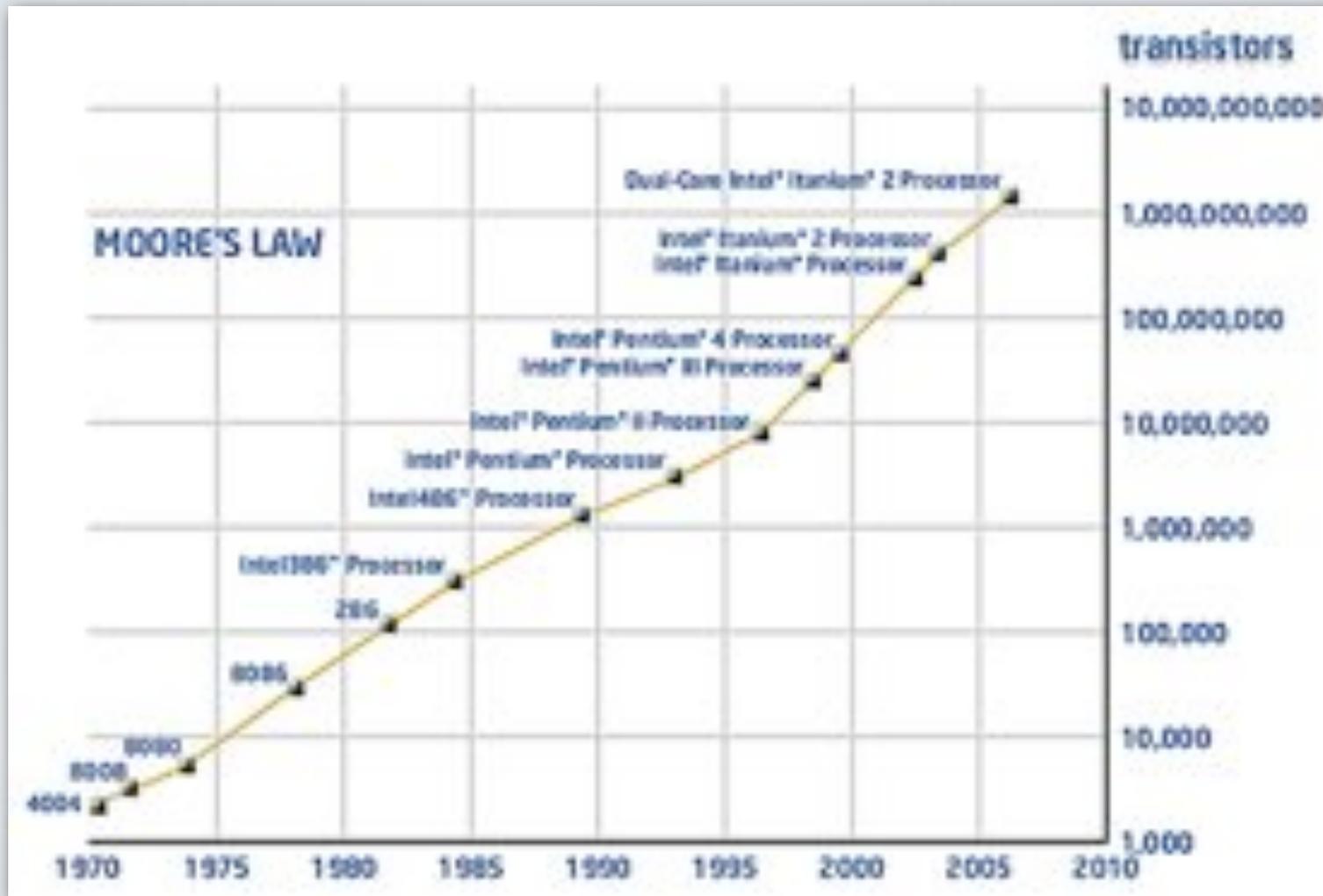


Memory





Moore's Law





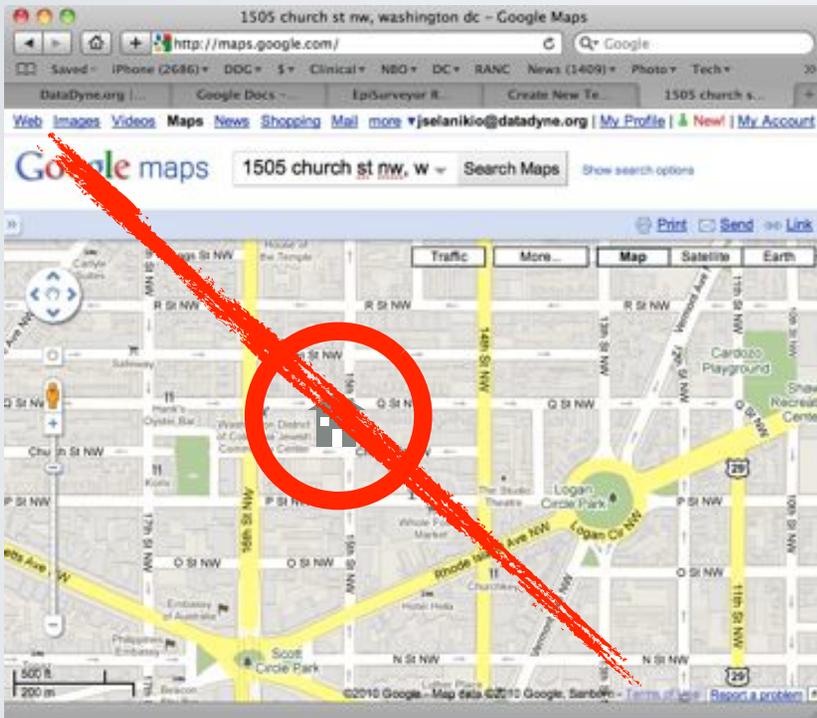
And now for the financial miracle...





PRE-PAID

WHAT'S SO MIRACULOUS ABOUT PRE-PAID?



or



Most people on this planet don't have these things



WHAT'S SO MIRACULOUS ABOUT PRE-PAID?

Pre-paid works by getting some of the poorest people in the world to loan money to some of the world's richest corporations.

And everyone wins.



WHAT'S SO MIRACULOUS ABOUT PRE-PAID?

It's microcredit ...
in reverse!



WHAT'S SO MIRACULOUS ABOUT PRE-PAID?

Like every system, the mobile system has ongoing costs.

Like every successful system, it has ongoing revenue from users, too.



WHAT'S SO MIRACULOUS ABOUT PRE-PAID?

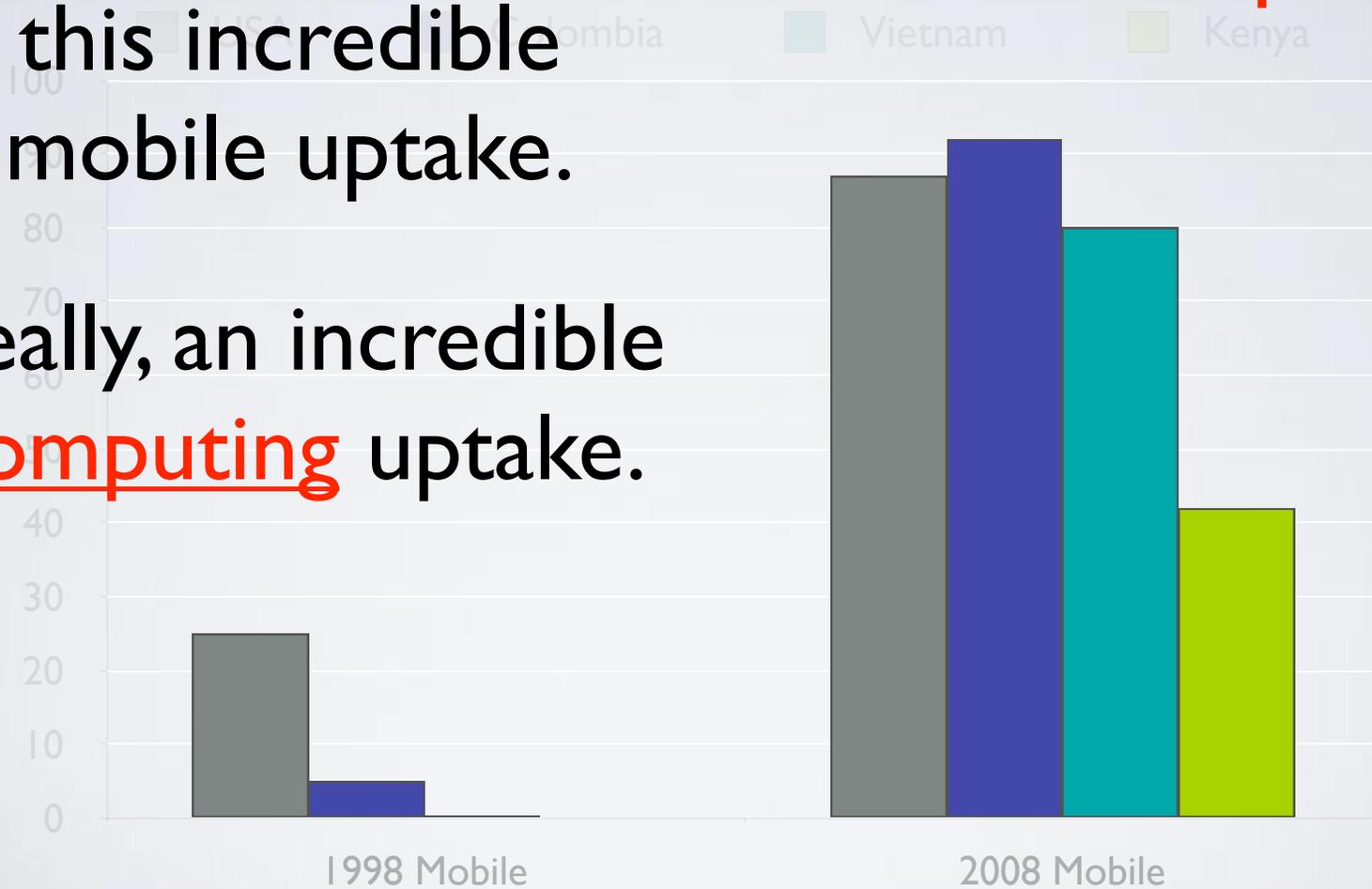
**For something to be
sustained, it needs
sustained revenue**



And that's how we wind up with this incredible mobile uptake.

Really, an incredible information uptake.

Really, an incredible computing uptake.



**HOW CAN WE USE
THIS FOR HEALTH,
AGRICULTURE, AND
OTHER THINGS?**



Unintentional Benefits



diagnosis

Telemedicine

dosages

We thought it would be high-speed video uplinks ... but instead it is simple voice calls and texts from one care provider to another.

**Simple, scaled,
sustained.**

consults

referrals



Unintentional Benefits

But the mobile phone is not an “mHealth” tool, or an ag tool, or a microcredit tool.

It is a cross-sectoral tool, and that is a huge part of its success.



Intentional Benefits: 2 Examples



Universally Available & Affordable
Mobile Electronic Data Collection



WHY DATA COLLECTION?



THE MILLENNIUM DEVELOPMENT GOALS



THE MILLENNIUM DEVELOPMENT GOALS

“Many of the most important MDGs, suffer from a worrying lack of scientifically valid data... Often ... one cannot know the baseline condition before the MDGs, or know if the desired trend of improvement is actually occurring.”

2005 Attaran PLoS Med

EPISURVEYOR 1ST VERSION

КОНСУЛЬТОВО (консульский) отдел посольства РОССИИ в _____ страна _____

QUESTIONNAIRE ВИЗОВАЯ АНКЕТА

Form for ATTENTION! Please type or print using ball-point pen. Incorrect information may cause delay of visa. Details of permission to cross the Russia border, or amendments of visa on the Russia territory. ВНИМАНИЕ! Писать нужно шариковой или гелевой ручкой. Неисправительная информация может повлечь за собой задержку в выдаче или продлении визы. Подробные сведения о разрешении на пересечение границы России или о внесении изменений в визу на территории России.

1 Present citizenship if you had USSR or Russia citizenship when and why you lost it? (Please list two on in the other in Russian the USSR and Russian, or one in it in other's language if appropriate)

2 Surname (in capital letters) Имя отчество (русские)

3 First name, patronymic (names) Имя, отчество (русские)

4 If changed, your surname, name (names) and patronymic before (the change) Если изменили, то Имя (имена), имя и отчество (отчества) до (изменения)

5 Day, month, year of birth Дата рождения [Day] [Month] [Year]

7 Object of journey Цель поездки в Россию

8 Russian department or organizations to be visited Имя русского учреждения

9 Means of transport (points of destination) Средства транспорта (места назначения)

10 Date of entry [1] Date of departure Дата въезда Дата выезда

12 Passport № 1.1 Категория, вид и серия записи

14 Index and name of the tourist group (Индекс, наименование туристической группы)

15 Place of work or study, position, in address, telephone number Место работы или учебы, должности, адрес, номер телефона

16 Do you have medical coverage valid in Russia (check one) Official Medical Protection Plan Other Policy Attached for Approval

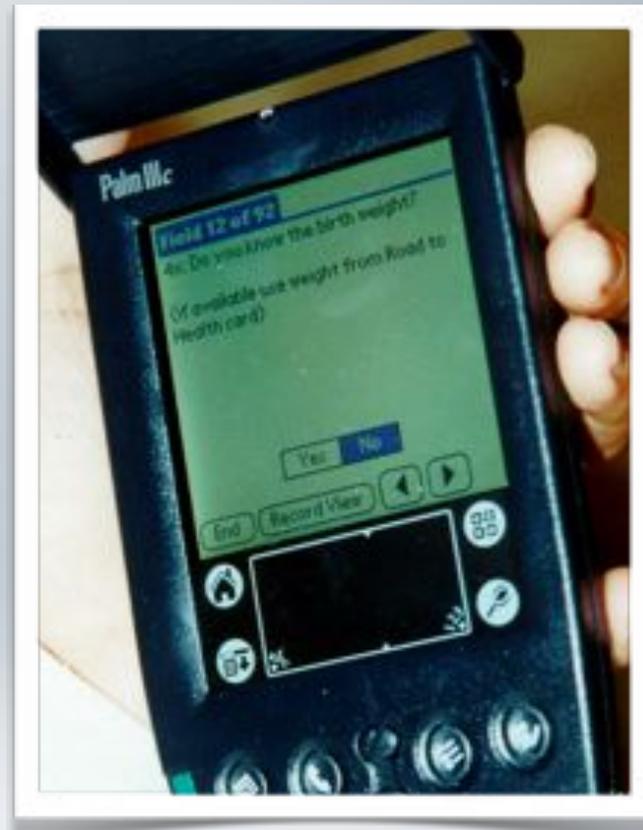
17 Permanent address, telephone number Адрес постоянного местожительства, номер телефона

18 Place of birth (if born in Russia USSR) when and where do emigrate Место рождения (если родился в России СССР) (Дата, место, время эмиграции)

19 Number of previous trips to Russia (Country per Year in Russian) Date of the latest trip Дата последней поездки в Россию

	Surname Фамилия	First name, patronymic Имя, отчество (русские)	Date of birth Дата рождения	Permanent address Адрес постоянного места жительства
20. Children under 16 years travelling with you				
21. Relatives in Russia				

I declare that the data given in the Questionnaire are correct. Дата: _____
Подписано, все мое, данное, удостоверение в истинности, истинности предоставления. Подпись: _____



OTHER PROGRAMS WERE SLOW TO ADOPT IT

???

Two problems

Installation

Hardware

Installation

1994

- Software was something that came on disk and you installed
- We were stuck in that mindset.
- We didn't see the world changing

Now

- We run many applications in the browser - no installation
- “Web applications”
- Hotmail, Mapquest, Wikipedia, Yahoo Mail, Facebook, Google Docs, etc, etc

MAPQUEST.



hotmail

friendster

Gmail
by Google

LinkedIn

facebook

Installation



Web apps allows inexpensive scaling of really useful software everywhere there's a browser (without installation)

MAPQUEST.



hotmail

friendster

Gmail™
by Google

LinkedIn

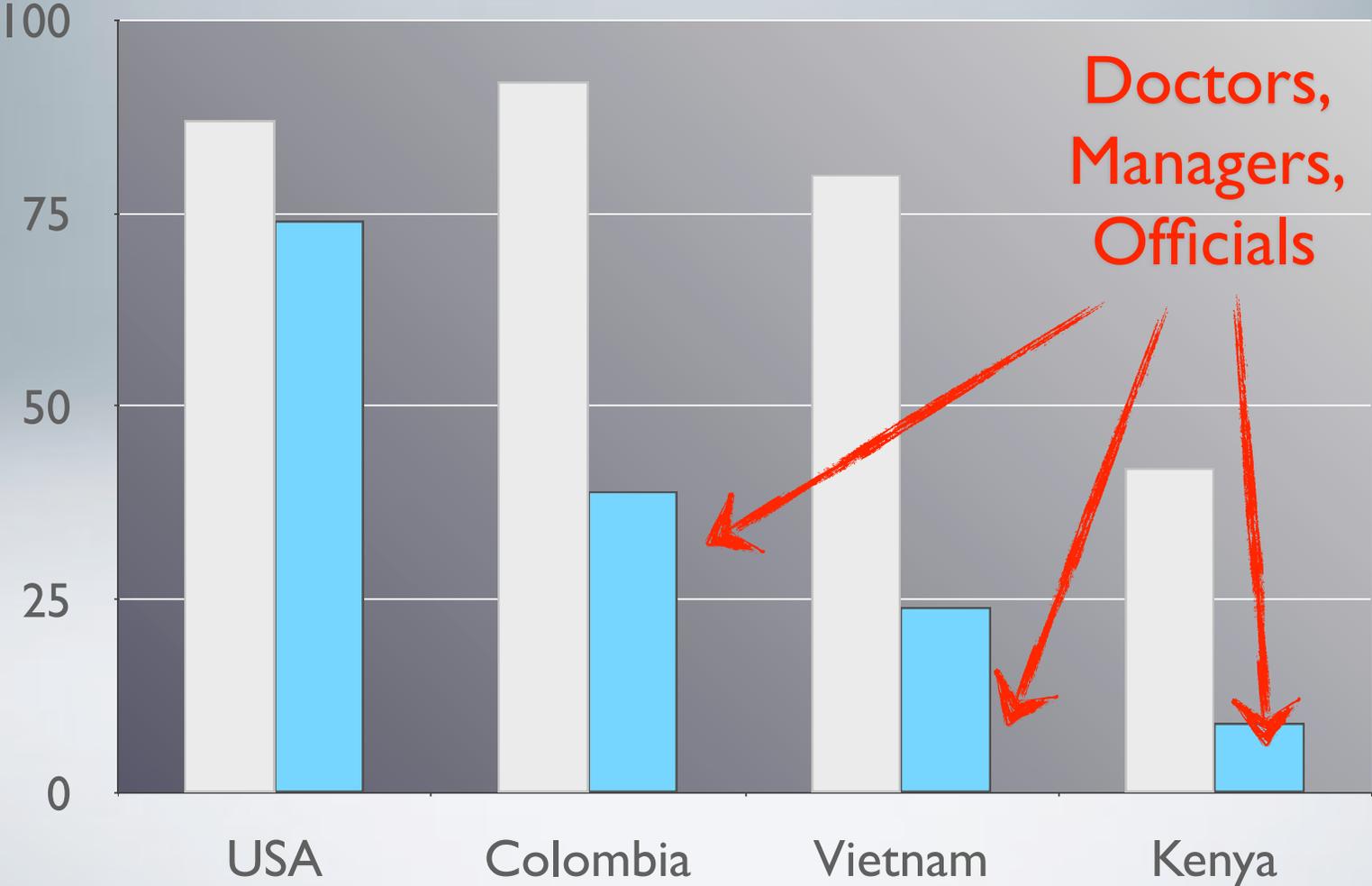
facebook

Hardware



No need to buy Palm Pilots anymore ... since people went out and bought something better.

Low internet adoption overall but very high in key groups



So we got around the installation problem by eliminating installation:
EpiSurveyor is a web app.

And we got around the hardware problem by switching to mobile phones.



EPI SURVEYOR IS THE FIRST
GMAIL-STYLE “WEB APP” FOR
INTERNATIONAL
DEVELOPMENT



How does EpiSurveyor work?

DataDyne's EpiSurveyor
http://www.episurveyor.org/

Online Form Creator

Name

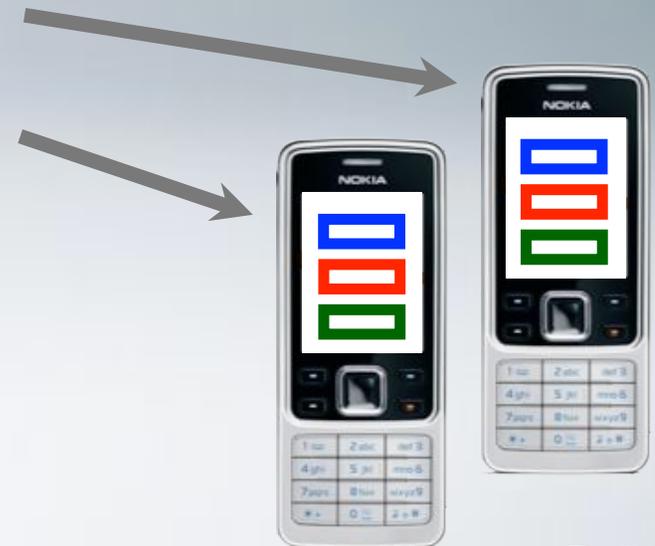
Age

children

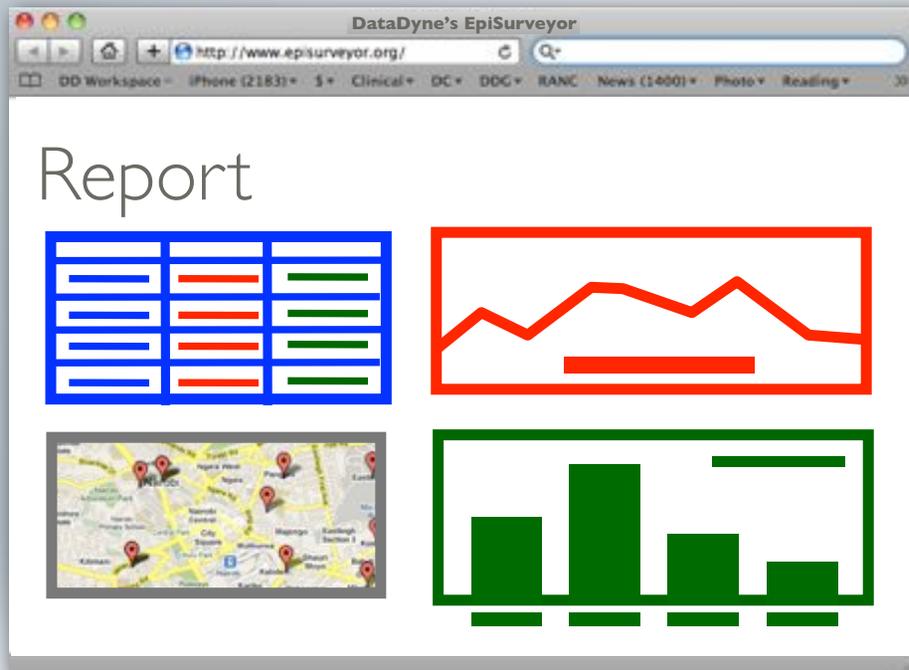
Create forms online and push to common mobile phones



No smartphone needed



How does EpiSurveyor work?



Fill in the forms and upload back to the website



Instant view of data, including graphs, charts, maps



www.episurveyor.org

The screenshot shows the Episurveyor web interface. At the top, the URL is <http://episurveyor.org/#!/dashboard/index>. The page title is "DATA DYNES EPI SURVEYOR". A navigation menu includes "Home", "Account", "API Settings", and "Upgrade Info". The main content area is divided into two sections. On the left, there is a "My Forms" section with a search bar and buttons for "Open", "Delete", "Export", "New", and "Import". Below this is a table of forms:

Form	Owner	Records	Last Mod	Last Add
adms	jer@datadyne.org	2	26/01/2009	26/01/2009
coneds	jer@datadyne.org	6	11/05/2009	01/06/2009
defoam	jer@datadyne.org	2	11/05/2009	11/05/2009
demo_aka_test	jer@datadyne.org	0	11/05/2009	-
END_OPN2	jer@datadyne.org	29	26/01/2009	27/01/2009
FacilityAdm	nicholas_brown@gsi.com	0	09/04/2009	-
Flu_informal	mikeynsley@gmail.com	1	08/01/2009	08/01/2009
GPS12780	rdonne@datadyne.org	4	11/05/2009	05/02/2009
Health_Reduced_b	jer@datadyne.org	0	11/05/2009	-
Logbook_ROUND5	SIAD_kanye@polsi.be	56	24/06/2009	20/06/2009
ITN_coverage	jer@datadyne.org	1	11/05/2009	11/05/2009
malariiform	jer@datadyne.org	2	01/06/2009	01/06/2009
Malaria_supervi_HFAC_v2	alters@who.int	4	21/05/2009	21/05/2009
Malaria_test2	jer@datadyne.org	32	01/06/2009	01/06/2009
maltestformv2	jer@datadyne.org	461	04/06/2009	04/06/2009
HuProductsStorageCond	nicholas_brown@gsi.com	0	04/01/2009	-
mal_demo	jer@datadyne.org	2	26/05/2009	26/05/2009
Healthtest	jer@datadyne.org	1	11/03/2009	01/03/2009

On the right, there is a "Forms" section showing a summary for "maltestformv2" from 2009-05-08 to 2009-05-18. It includes a bar chart titled "Submitted Records" and a question summary: "Question: Vetter/Con 2 Option: Yes 2". Below this is another bar chart titled "% that responded 'Yes' to Question 'Concent'".



WE ARE EMULATING GMAIL, FACEBOOK, SKYPE, AND THE MOBILE PHONE

1. affordable to users
2. require no technical experts to use
3. cross-sectoral



For majority of users,
no meetings,
no cost,
no consultants,
no contract,
no permission





Who Pays?



Feature	Free	\$5000/yr
Number of Forms	Up to 20	Unlimited
Number of Questions	Up to 100	Unlimited
Number of Data Records	Up to 500	Unlimited
API	No	Yes



At the current rate,
we'll be revenue
positive in 3 years.

Why is this important?

Sustainability and Quality



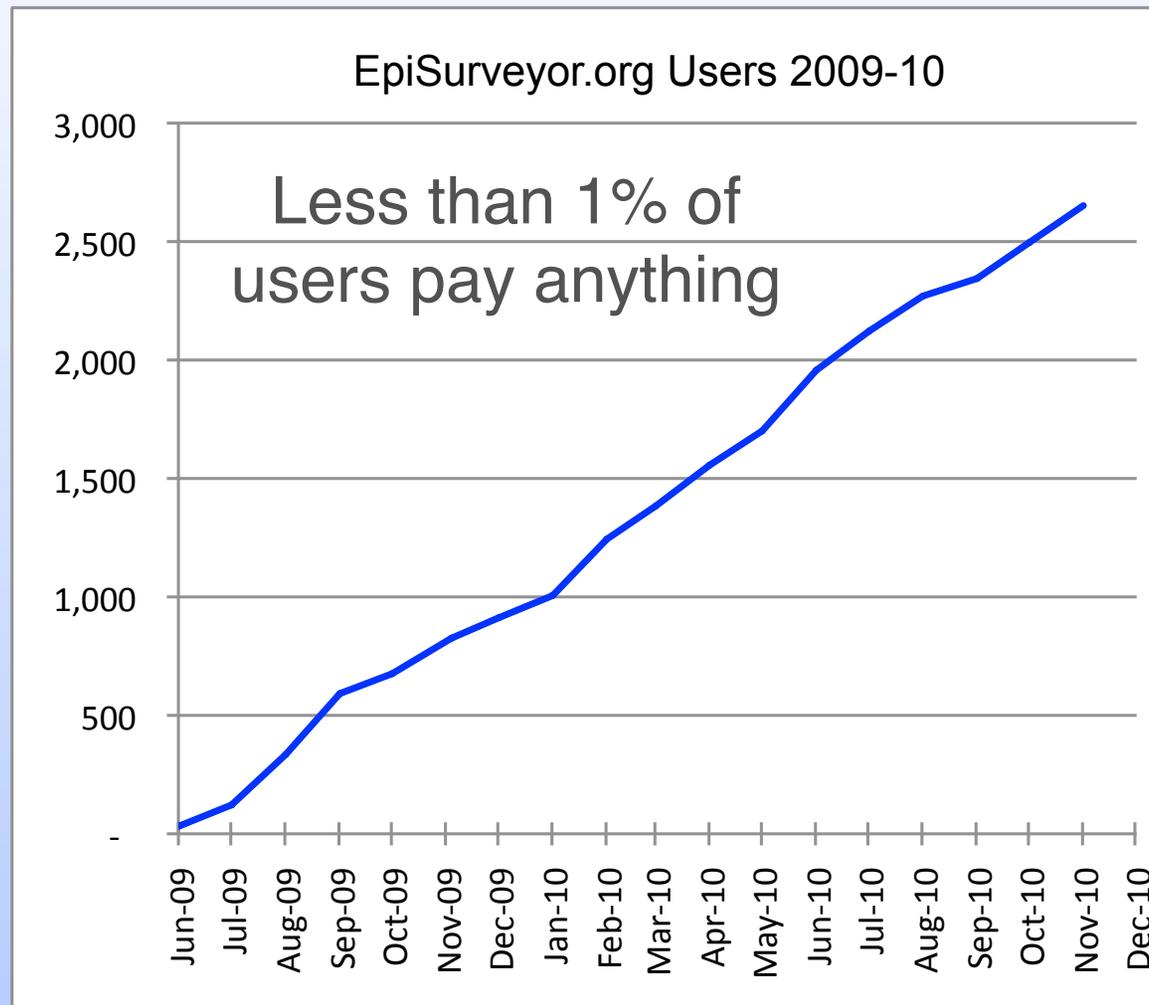
Charging the Users Creates Better Technology



- Whoever pays the piper calls the tune
- Donors are a poor proxy for the needs of end-users
- Well-funded users are a better proxy
- After one year, we bring in > \$200k from demanding, picky, expert, on-the-ground users . . . and that pushes us to make the software better



2800+ users in 18 months

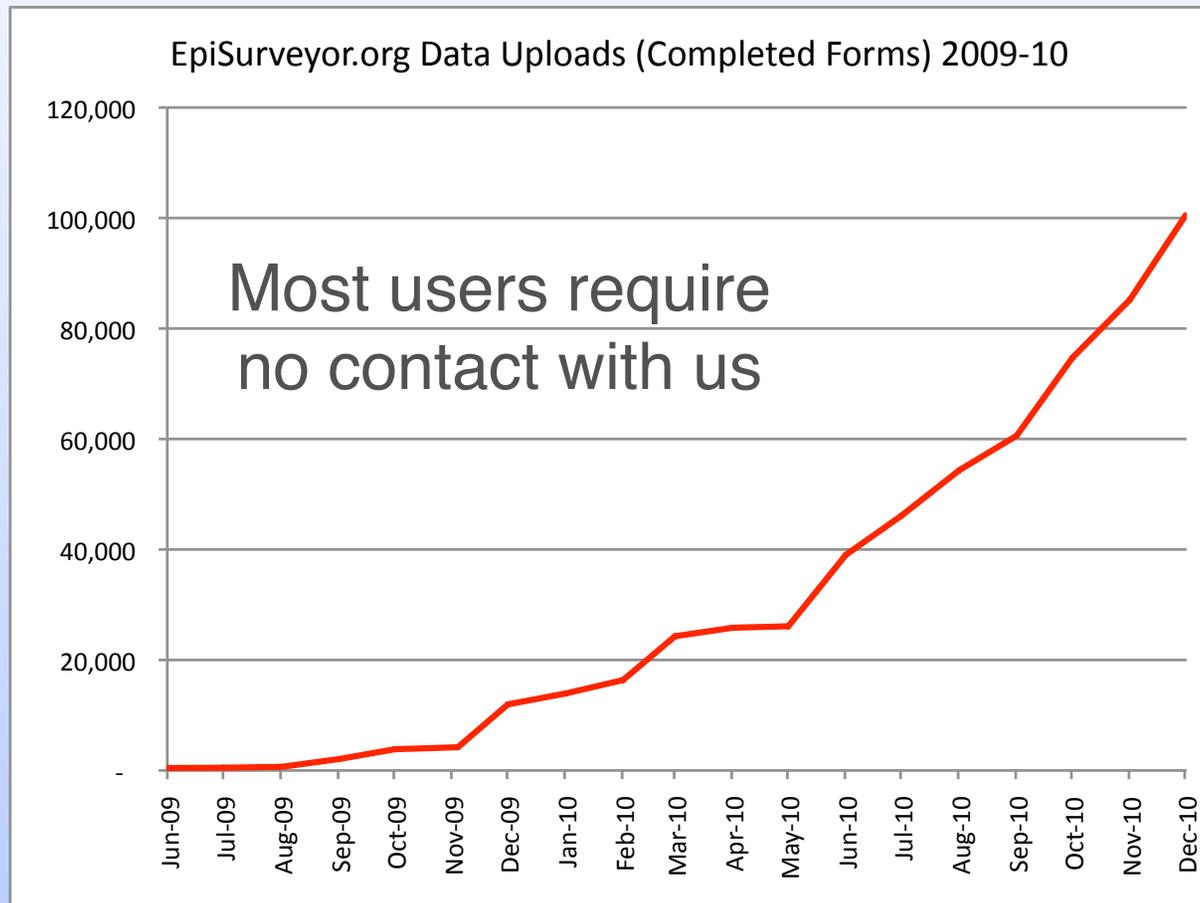


Who are these users?

- More than 100 NGOs
- More than 100 universities
- 10 UN agencies
- More than 20 national governments
- 8 USG organizations
- Hundreds of individuals researchers and practitioners



112k+ forms uploaded in 18 months





KENYA MOH



Kenya was the first country to use EpiSurveyor, first as beta testers on PDAs, and now on mobile phones.

They've been using it for 5 years.

KENYA MOH



Kenya MOH now routinely creates, designs and implements mobile-phone-based data collection systems: for Child Health Week (with UNICEF), emergency polio vaccination campaigns, and many other uses.

KENYA MOH



Rather than wait 6-12 months for data entry to occur before analysis, they have real-time data collection, immediate analysis, and same-day action based on their data.

KENYA MOH



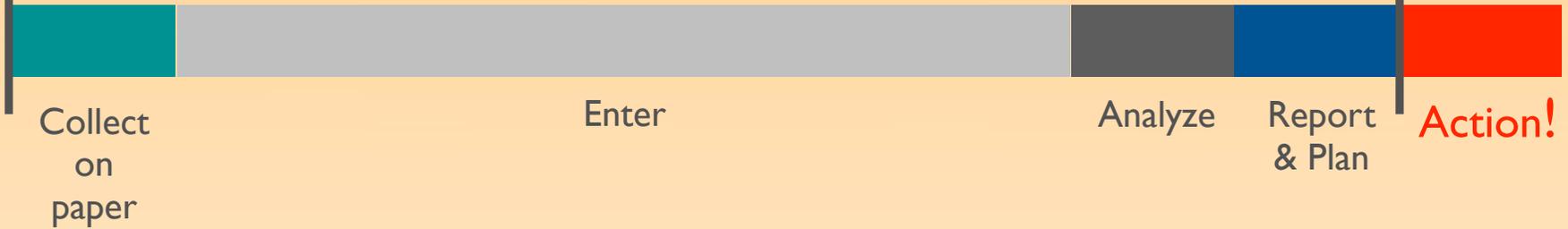
Rather than wait 6-12 months for data entry to occur before analysis, they have real-time data collection, immediate analysis, and **same-day action based on their data.**

KENYA MOH



Jan '09

Jan '10



KENYA MOH



We are talking about
knowing faster,
understanding faster,
and **acting** faster





Not just health:

**The Smithsonian is using this to track
mountain gorillas in Uganda**

**The World Bank is using this to
measure the affect of the recession
on families in Latin America**

**Tanzania is using this to track
payments to farmers**



**Cross-sectoral tools are
more likely to scale and
sustain**



Intentional Benefits

2nd Example

Mobile Info Platform

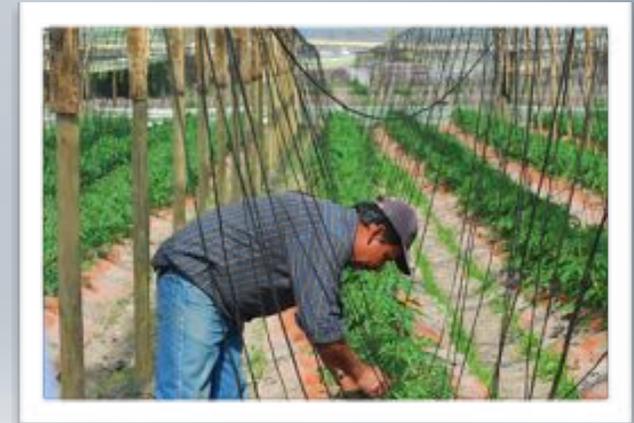


Lets anyone build an SMS messaging system

Reaches populations otherwise unreachable by electronic media

Send short, timed messages on any topic to mobile phones via SMS

Train, communicate, coordinate



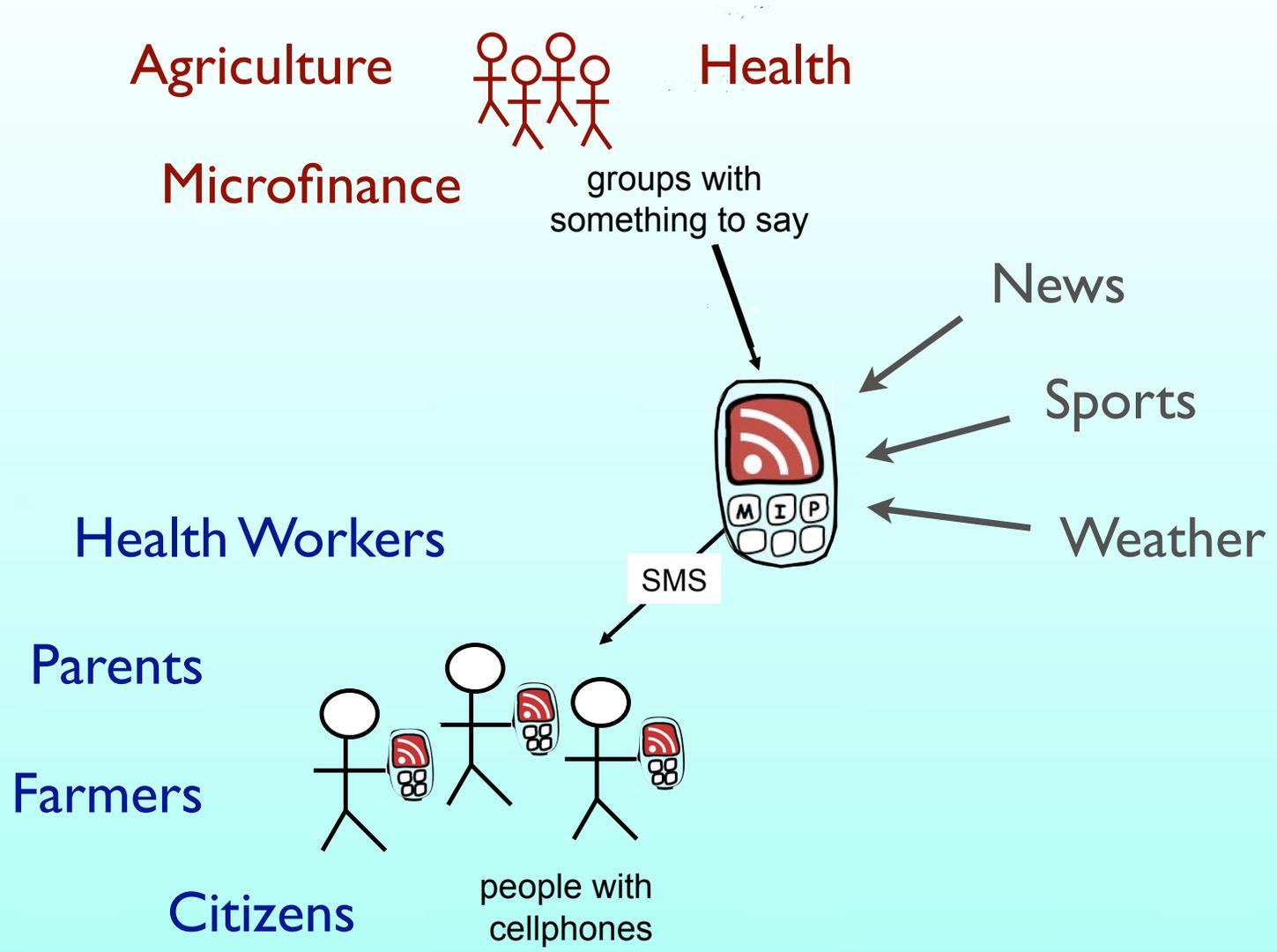
Intentional Benefits

Mobile Info Platform



Like with EpiSurveyor, the idea is to create a system managed from a website that allows anyone to create an SMS-based system without “meetings, money, or MOU”





MIP

In Chile, the Ministry of Agriculture needs to communicate with rural farmers about prices, techniques, programs, etc.

The Ministry has its content.

The farmers have phones.

Until MIP there was no easy way for the Ministry to get the contents to the phones



MIP

As with EpiSurveyor, the benefits of the MIP system can be used for any field, not just for health.

As with EpiSurveyor, we intend to pay for it by having a “pro”, paid version aimed at 1-5% of the users



Expansion of MIP

- Peru using MIP for education of rural health workers and mothers
- Guatemala using MIP to reach teens with HIV/AIDS
- Tremendous interest from ag and health
- Possibilities include reminders, updates, lessons, polls/quizzes



Recognition for EpiSurveyor & MIP

2010 Frida Award for Building the Information Society in Latin America

2009 Wall Street Journal Technology Innovation Award for Healthcare IT

2009 \$100,000 Lemelson-MIT award for Sustainability

2009 FastCompany Social Enterprise of the Year

2009 Yahoo! Green award

2009 FACT Social Justice award

2008 Stockholm Challenge prize for “Best Use of ICT for Health”

2008 Knight News Challenge

2008 Tech Museum Award for health

Covered by

The Economist

Forbes

BBC

The Wall Street Journal

Voice of America

CNBC

The Discovery Channel

Stanford Social Innovation Review

The Lancet

PC Magazine

InfoWeek

Key Points

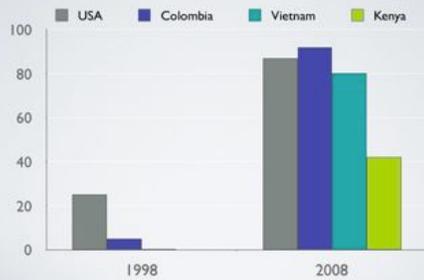


For something to be sustained, scaled, and excellent:

- Easy
- Affordable (but not free to all)
- Cross-sectoral
- Uses the scale of the internet



Mobile Phone Penetration



How did mobile happen?

Memory & Moore's Law

A miracle of financial engineering

1. Unintentional benefits to the health system

diagnosis

Telemedicine

dosages

consults

referrals

How does EpiSurveyor work?

Online Form Creator

Create forms online and push to common mobile phones

No smartphone needed



KENYA MOH

3. Intentional benefits to the health system

Mobile Info Project

Like with EpiSurveyor, the idea is to create a system managed from a website that allows anyone to create an SMS-based system without "meetings, money, or MOU"

Adding features like lookups, quizzes/polls, etc.

Star Points



- For something to be sustained and scaled:
 - It needs sustained revenue
 - It shouldn't require any tech expertise to operate
 - It should be general/cross-sectoral
- Charging users creates better technology

Questions?



Thank you for your attention.

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www.datadyne.org
www.episurveyor.org

