The Importance of the Internet in Disaster Relief
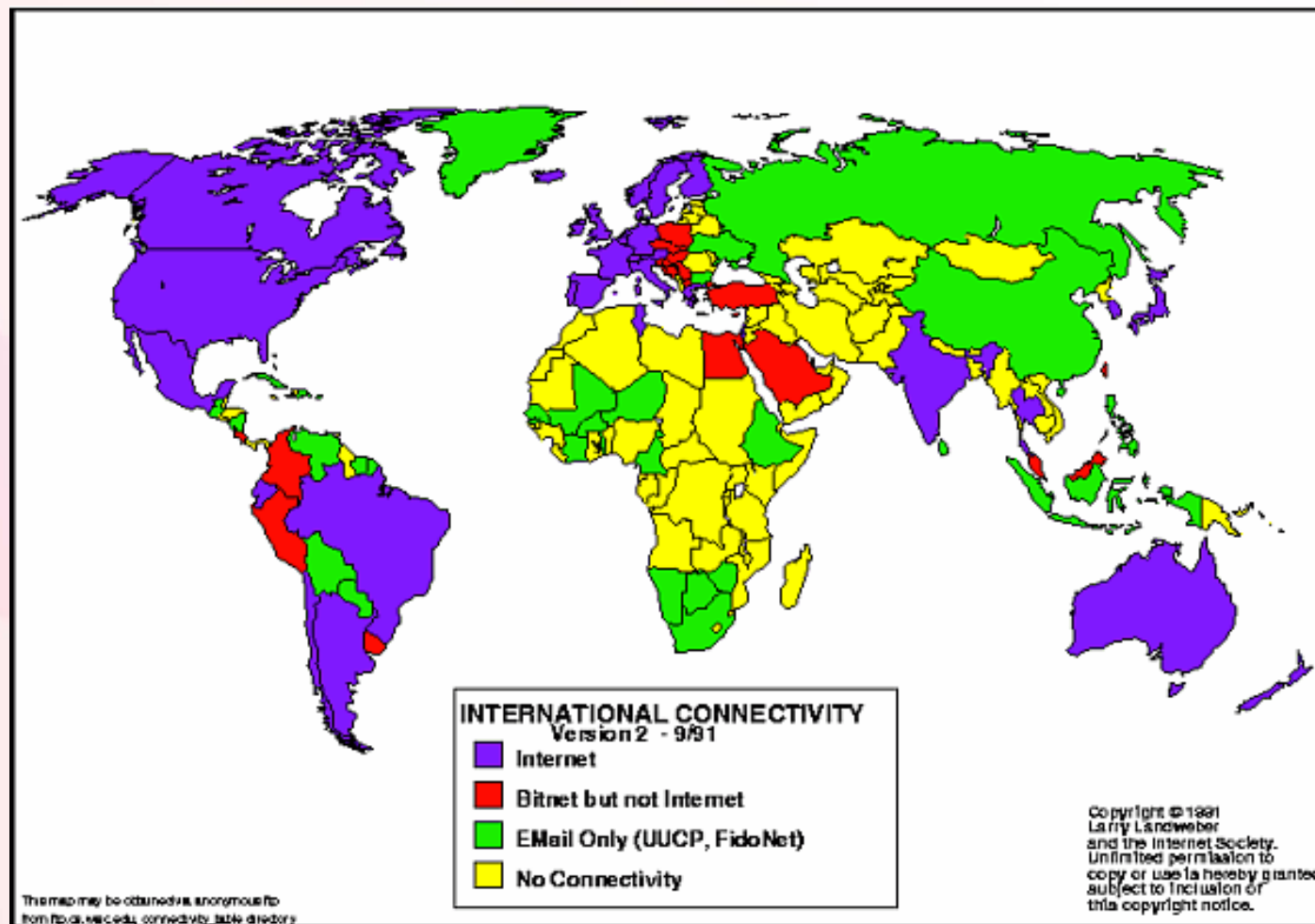
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National Electronics and Computer Technology Center
Thailand

ITU/ESCAP Disaster Communications Workshop
12 – 15 December 2006
Bangkok, Thailand

Outline

- Growth of the Internet and global access allows reach-ability for the disaster information system

- Examples of applications on Information Management for Emergency

- Some lesson learned

- Towards Internet-based Disaster Information Management System: Open Standards
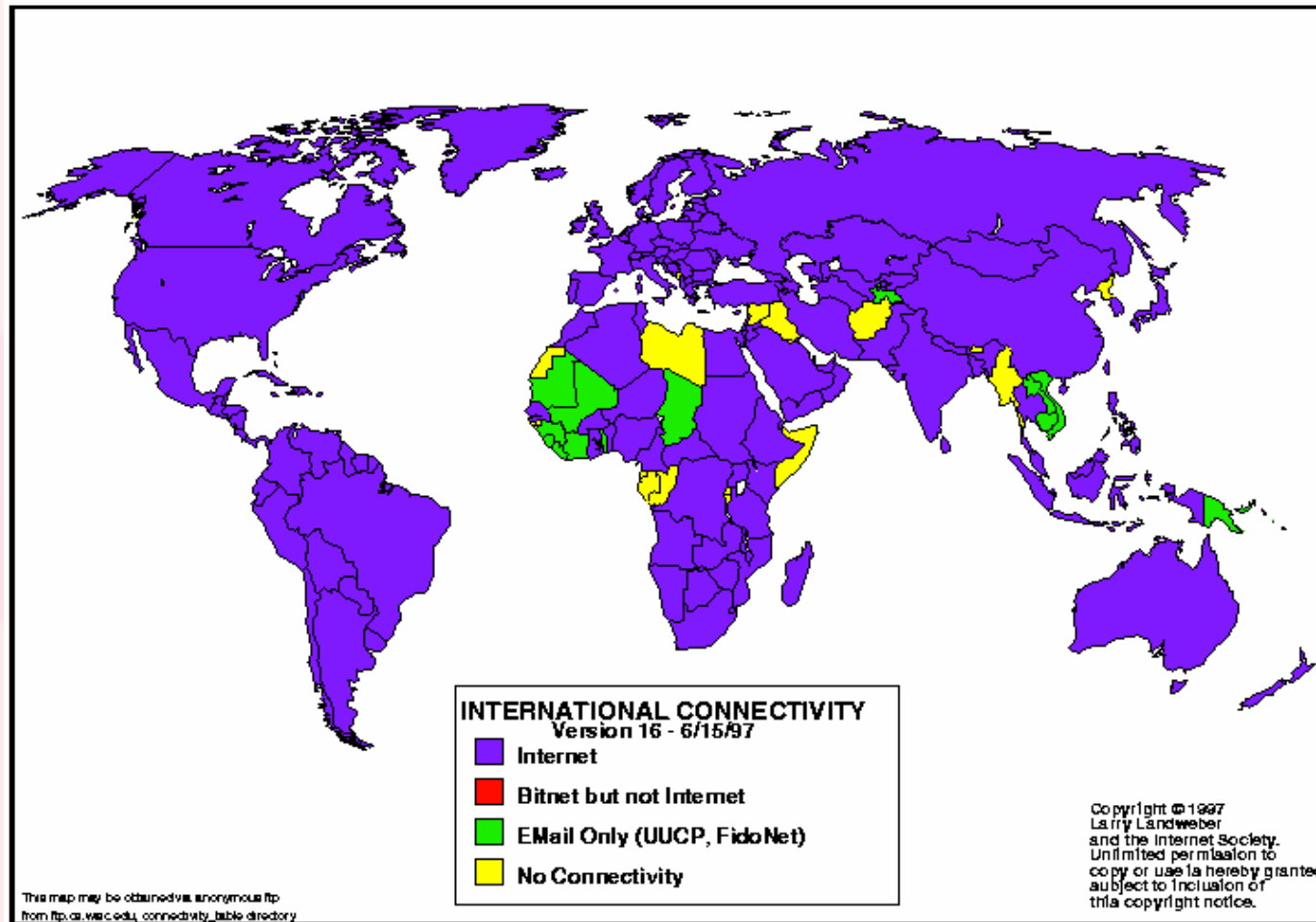
A Driving Force for National Science and Technology Capability

Larry Landweber's International Connectivity maps, 1991

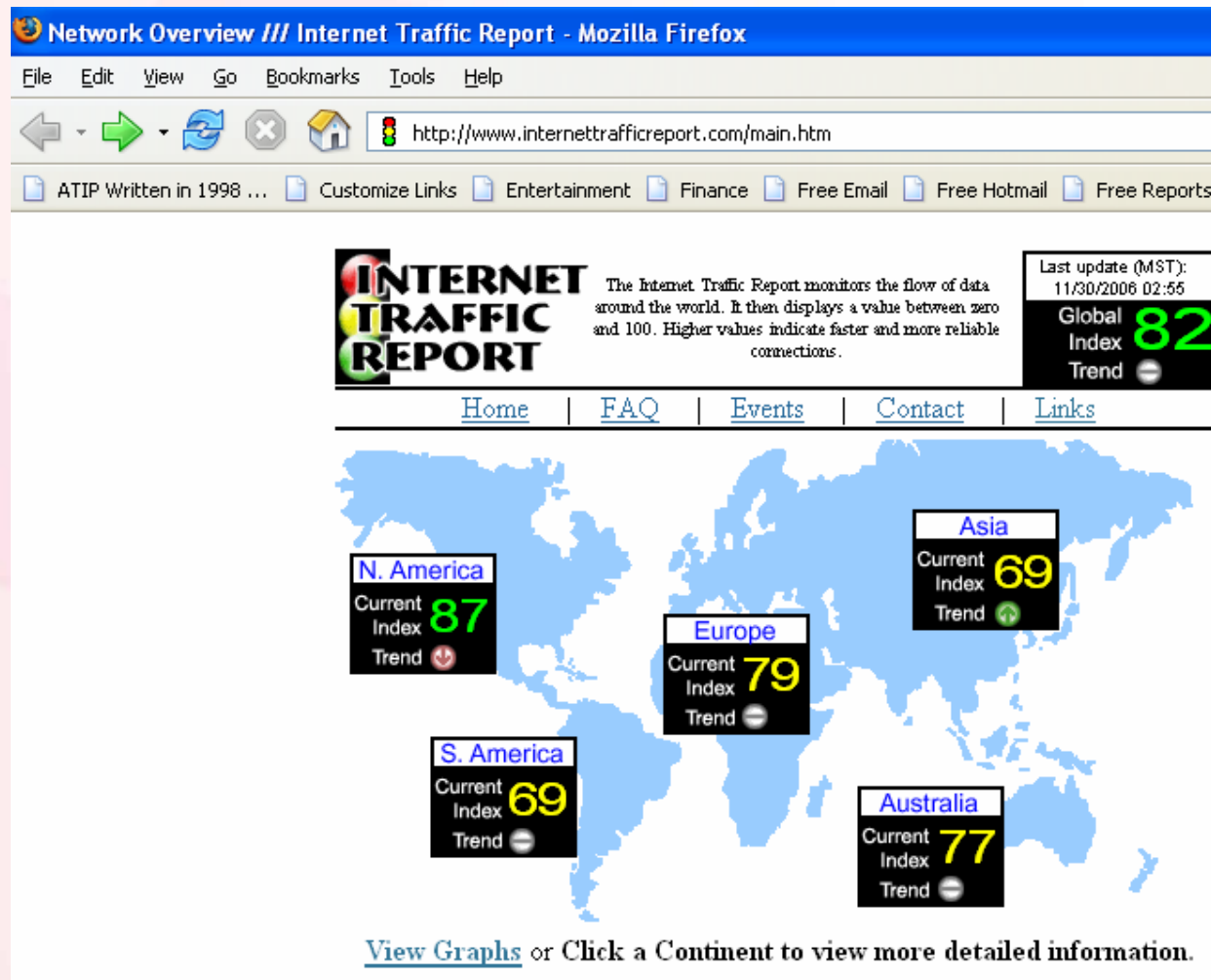A Driving Force for National Science and Technology Capability

Larry Landweber's International Connectivity maps, 1997

http://www.internettrafficreport.com/main.htm

ITU/ESCAP Disaster Communications Workshop

Missing Persons Tracking System

The system is developed to be a data center of disaster's missing persons. Relatives and friends can insert the detail of the missing love one. People in the disaster's area and governmental staffs may able to help identifying the status of the missing person. At the present, two databases of missing persons registration system are opened.

❑ Missing Persons Registration System for the Tsunami in Thailand at
http://www.missingpersons.or.th/
❑ Missing Persons Registration System for the Flooding in Northern of Thailand at
http://www.missingpersons.or.th/flood/

User Requirement Collection

Metadata Design

Launching the system

Open Source Developing Tools:

❑ Operating System:
  • FedoraCore 3 Linux
❑ Web Server:
  • Apache 2.0.52
❑ Programming Language:
  • PHP 4.3.10
❑ DBMS: MySQL

Testing and Adjusting

Database & Web-based Implementation

14 Dec 2006

NECTEC สวทช NSTDA

Donation Matching System

The system is developed to receive the registration of the donations from the donors and the registration of requirements from the victims in the disaster's area. This system is intended to be a data center of the donation including the matching algorithm to meet the victims requirements. The system is under construction.

Open Source Developing Tools:

❑ Operating System: FedoraCore 3 Linux

❑ Web Server: Apache 2.0.52

❑ Programming Language: PHP 4.3.10

❑ DBMS: MySQL

User Requirements Collection

Metadata Design

Launching the system

Database & Web-based Implementation

14 Dec 2006

Testing and Adjusting

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a member of NSTDA
NSTDA

"**I am Alive**" System

The system is developed for survivors from the disaster. Survivors can register by themselves their information into the system via Internet to be another channel of sending message to relatives and friends. In addition, people outside the disaster's area may access the system to query and search for their missing persons. At the present, one database is opened.

. "I am Alive" system for flooding in the northern of Thailand at
http://www.nectec.or.th/iamalive

User Requirements Collection

Metadata Design

Launching the system

Database & Web-based Implementation

Open Source Developing Tools:

❑ Operating System:
    . FedoraCore 3 Linux
❑ Web Server:
    .Apache 2.0.52
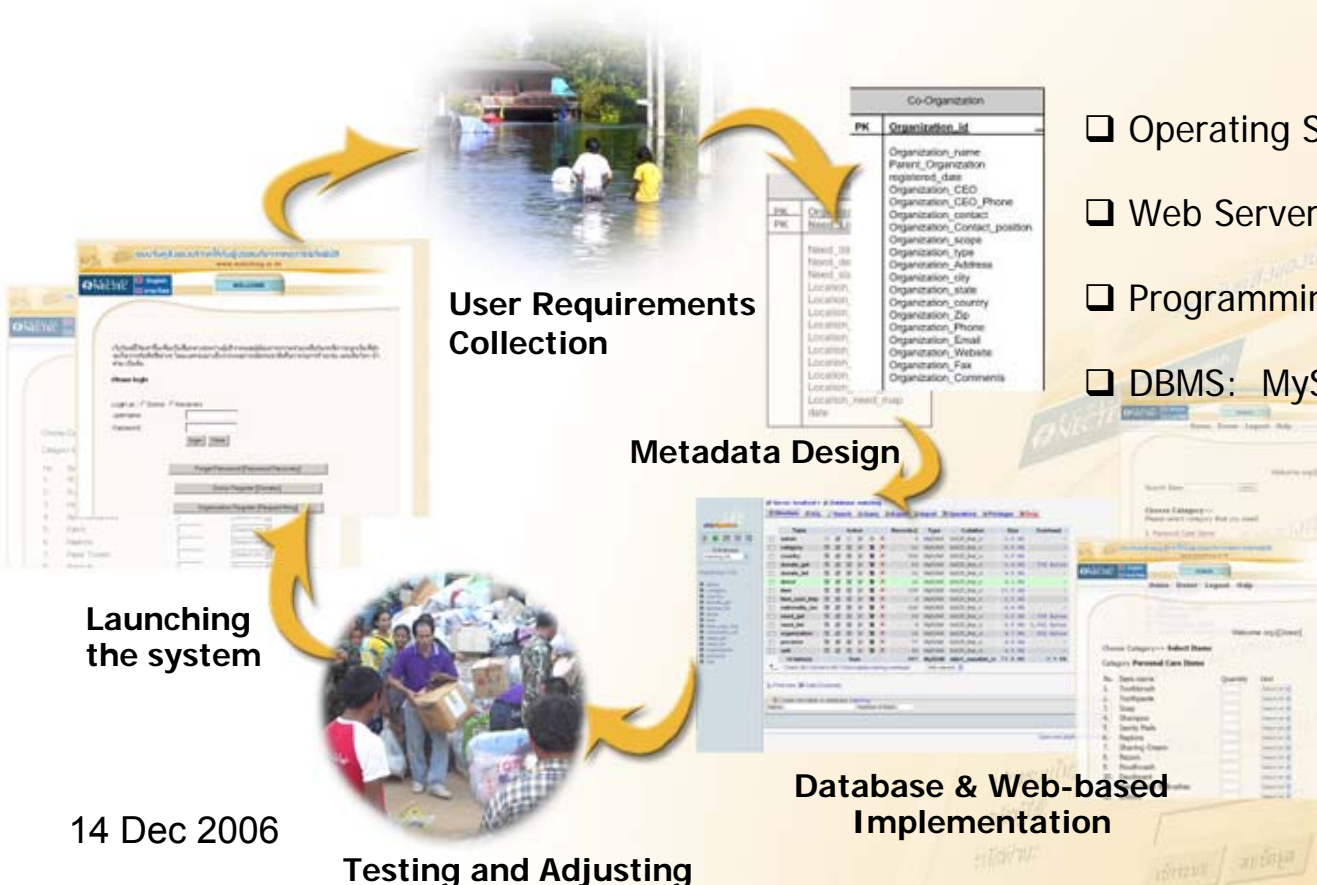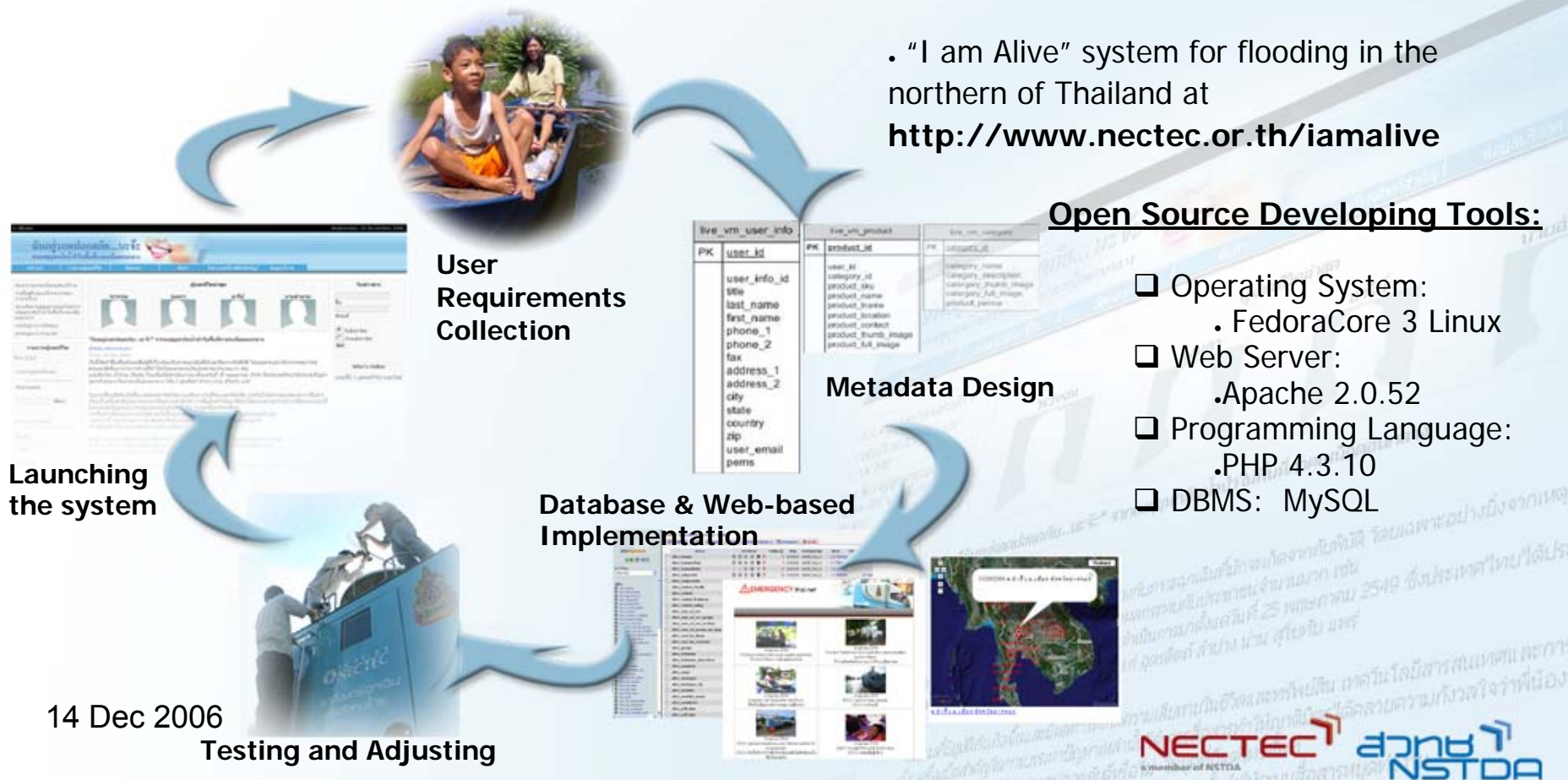❑ Programming Language:
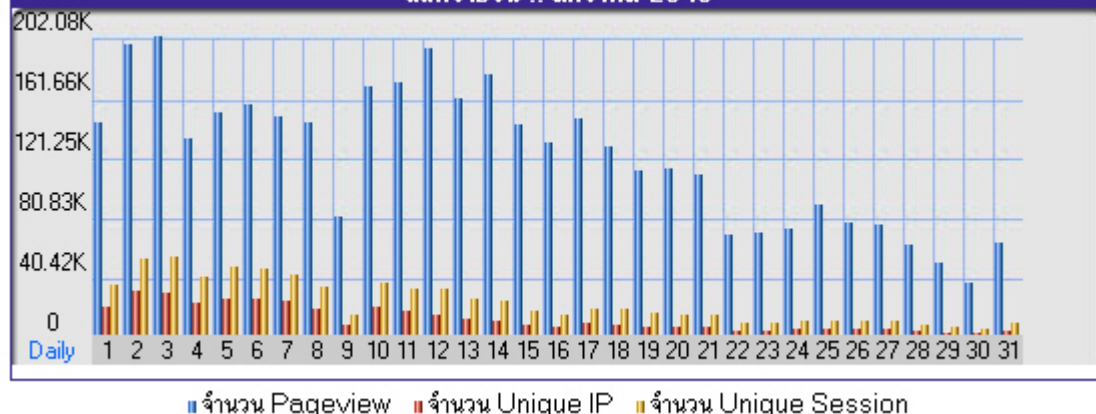   .PHP 4.3.10
❑ DBMS: MySQL

14 Dec 2006

Testing and Adjusting

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สรุปสถิติเป็นรายวัน				
วัน/เดือน/ปี	ใน 1 เดือน			
	Page View	Unique IP	Unique Session	Return Visitor
1 มกราคม 2548	143,196	19,084	34,541	11,690
2 มกราคม 2548	195,716	30,054	52,307	20,165
3 มกราคม 2548	201,080	28,969	53,740	20,161
4 มกราคม 2548	132,066	22,059	40,392	14,752
5 มกราคม 2548	149,948	25,154	46,785	17,316
6 มกราคม 2548	155,220	24,425	45,573	17,232
7 มกราคม 2548	146,910	22,964	41,408	16,346
8 มกราคม 2548	143,192	18,496	33,475	13,912
9 มกราคม 2548	80,448	7,458	14,022	5,709
10 มกราคม 2548	167,163	19,578	36,265	14,622
11 มกราคม 2548	170,079	16,873	31,775	
12 มกราคม 2548	192,836	14,293	31,284	
13 มกราคม 2548	160,058	11,356	24,838	
14 มกราคม 2548	175,456	10,187	23,650	
15 มกราคม 2548	141,959	7,254	17,421	
16 มกราคม 2548	130,002	6,335	14,600	
17 มกราคม 2548	146,127	8,304	18,168	
18 มกราคม 2548	126,911	7,421	18,283	
19 มกราคม 2548	111,194	6,440	14,974	
20 มกราคม 2548	112,022	6,097	14,792	
21 มกราคม 2548	108,467	5,718	13,996	
22 มกราคม 2548	67,948	3,780	8,883	
23 มกราคม 2548	68,912	3,692	8,808	
24 มกราคม 2548	71,553	4,504	10,279	
25 มกราคม 2548	88,541	4,817	10,545	3,374
26 มกราคม 2548	76,293	4,665	10,750	3,274
27 มกราคม 2548	74,405	4,133	9,661	3,022
28 มกราคม 2548	61,387	3,564	8,044	2,604
29 มกราคม 2548	48,958	2,520	6,211	1,775
30 มกราคม 2548	35,937	2,412	4,749	1,731
31 มกราคม 2548	62,644	3,845	9,038	2,669
Totals	3,746,628	281,672	709,257	206,030

สถิติรายวัน :: มกราคม 2548

■ จำนวน Pageview ■ จำนวน Unique IP ■ จำนวน Unique Session

วันที่มี PageViews มากที่สุดประจำเดือน	
วัน/เดือน/ปี	จำนวน PageViews
3 มกราคม 2548	201,080

Truehits stats on
http://missingpersons.or.th
during January 2005, after
the 2004 tsunami

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Experience from Tsunami missingpersons.or.th

- Weeks of sleepless nights
- Sharing to www.thaitsunami.com thru DB table dump
- Closed down registration Feb 14, 2005
- A lot of data cleansing before further use
- Total number of registered records: 4636
- From 62 countries
- Only 340+ cases has been resolved

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Lesson Learned

- Due to urgent nature of the situation → information provided on an ad-hoc basis

- Language Barrier → Difficult for non-local to locate anything quickly

- Information scattered/ multiple web sites → difficult to find, duplicates records, lost track

- format incompatible (fax scan, database table dump, spreadsheet, pdf, and free-form text) → data consolidation impossible

- Insufficient internet bandwidth in crisis → difficult to get thru
- primarily voice-based coordination → highly congested, misinterpretation
- lack of coordination → Demand and supply mismatched and untimely
- Each relief group came from a different place at different time. Findings were **NOT** shared → Lack of continuity. Waste of time and resources
- **information sharing is and has always been a lower priority**

Quoting From "**Open Standards – The Way Forward**, A Personal Remarks by **Thaweesak Koanantakool**" May 4, 2006, at Regional Conference on Open Standards, The key to an open ICT Ecosystem

" …..

1. *Form a 'group' modelled after the Berkman Roadmap for Open ICT Ecosystems exercise to explore specific areas of interest in open standards in the Asia-Pacific context.*

2. *Foster regional cooperation towards developing government interoperability frameworks – at the national and regional levels. This would include the development of local definitions of open standards and guidelines for policy.*

3. *Undertake capacity building activities on open standards targeting government CIOs, developers, and the general public.*

4. *Hold a region-wide competition to promote the development of open standards and to recognize the interoperability of government projects based on open standards.*

5. *Undertake a study to analyze existing government interoperability frameworks, and understand how they impact competition in the market place.*

6. *Establish centres of excellence, involving all stakeholders, to develop proof of concepts and case studies. For example, these centres may monitor the use language-based open standards. ….."*

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OpenCARE!

- **OpenCARE =** the Open exchange for Collaborative Activities in Response to Emergencies
- a scalable information exchange infrastructure which primarily aims at providing better co-ordination in disaster handling
  - **Information sharing** (thru agreement and format)
  - **Infrastructure to enable such sharing needs** (implementation)
- A set of computer program that gathers information and disseminates them through the Internet network. It can be embedded and work with existing computer systems
- *First presented as "e-CARES" By Trin Tantsetthi,* at Regional Conference on Open Standards, The key to an open ICT Ecosystem, May 2-4 2006, Thailand
- http://opencare.inet.co.th

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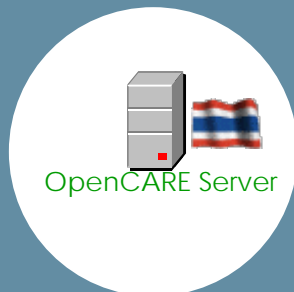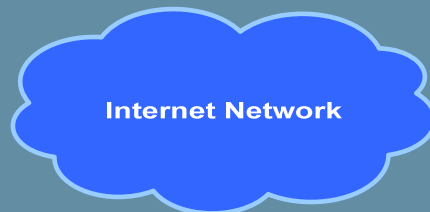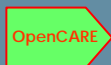
OpenCARE!

Central disaster and emergency coordination system enable incompatible systems to share information in their native formats
No change of original system in operation is required
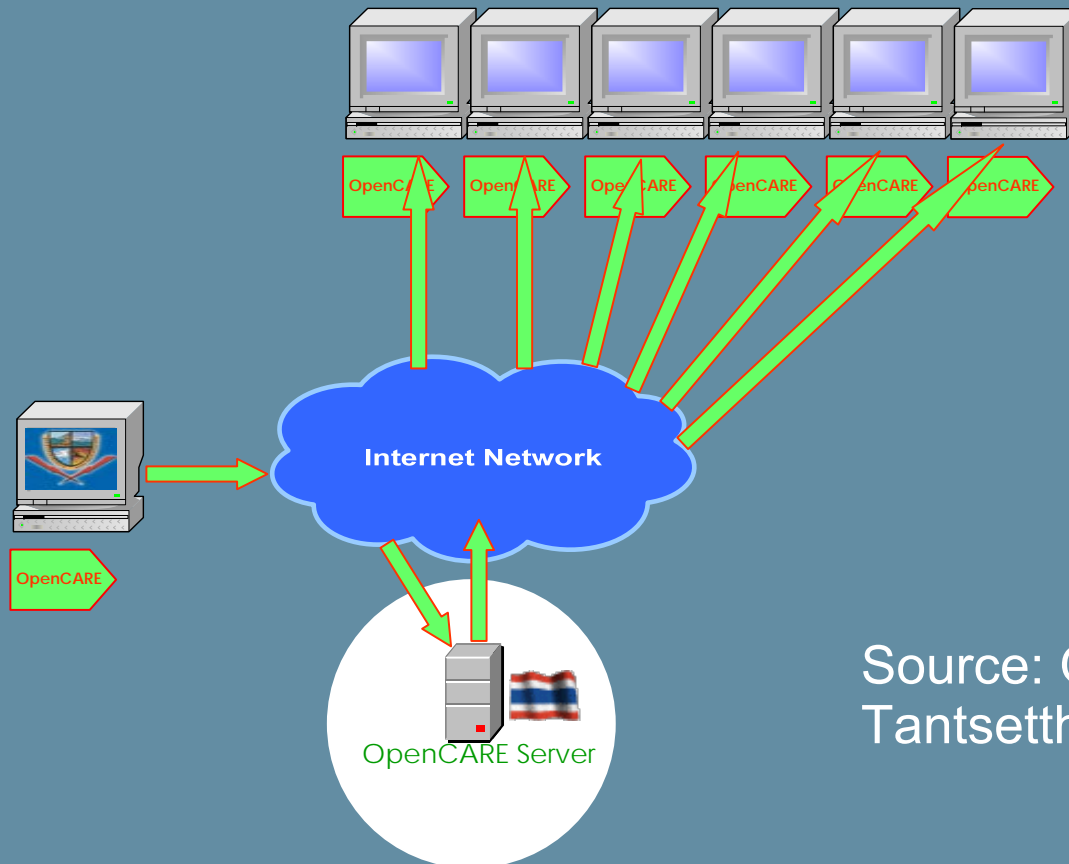

Reporting agent

Internet Network

OpenCARE Server
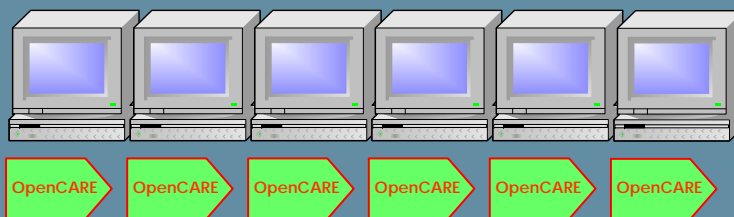
Source: OpenCARE Concept :Trin Tantsetthi & Phat Kulphaichitra

OpenCARE!

Translate different formats so that each incompatible systems do not have to change

OpenCARE OpenCARE OpenCARE OpenCARE OpenCARE OpenCARE

Internet Network

OpenCARE

OpenCARE Server

Source: OpenCARE Concept :Trin Tantsetthi & Phat Kulphaichitra

OpenCARE!

Accurate and usable information will be timely shared to participating agencies

OpenCARE OpenCARE OpenCARE OpenCARE OpenCARE OpenCARE

Internet Network

OpenCARE

OpenCARE Server
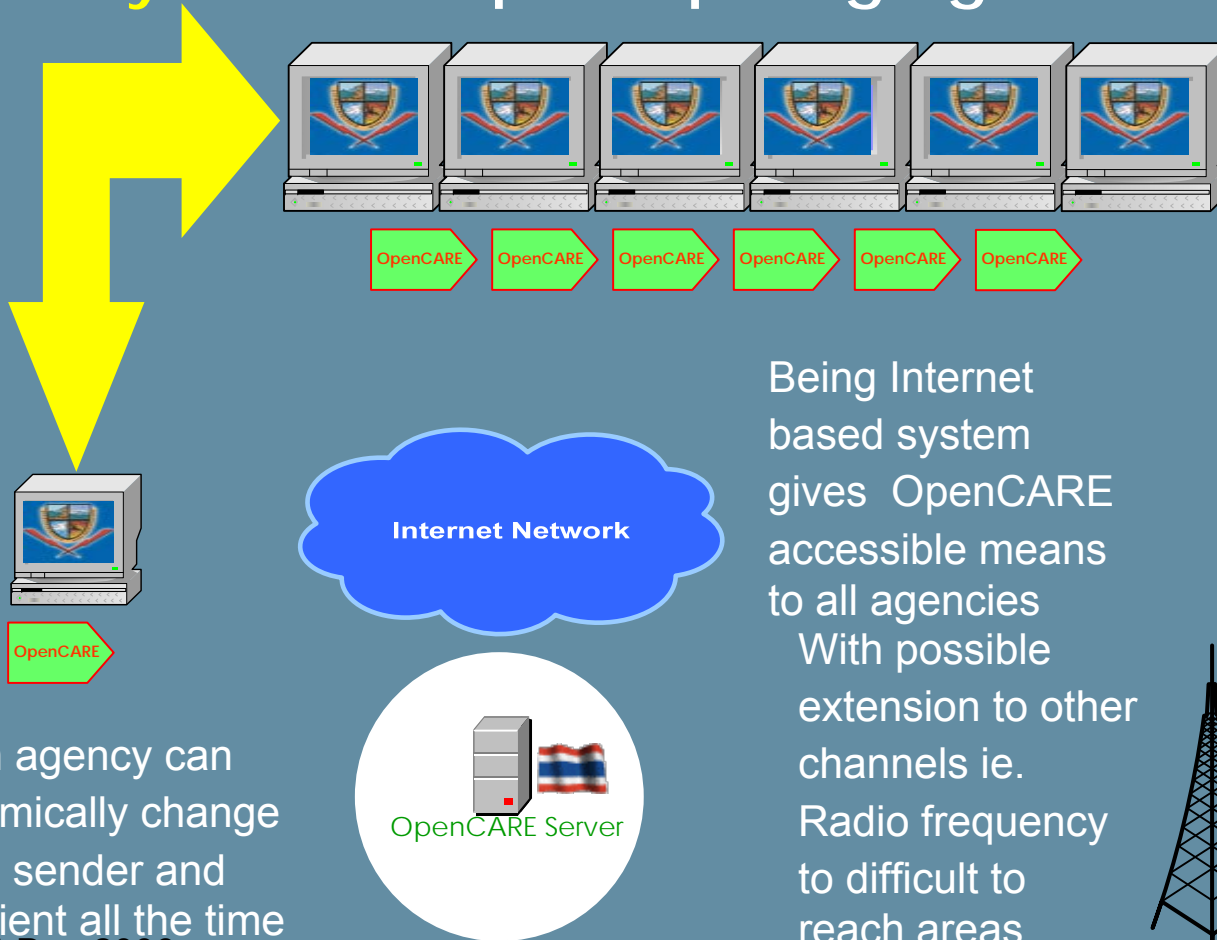
Each agency can dynamically change to be sender and recipient all the time

Being Internet based system gives OpenCARE accessible means to all agencies
With possible extension to other channels ie. Radio frequency to difficult to reach areas

ITU/ESCAP Disaster Communications Workshop

The Importance of the Internet in Disaster Relief

- Internet Reach-ability

- Internet based application Infrastructure for Information Management for Emergency

- Information Sharing through Open Standards and Interoperability

- Coordination, Collaboration, Communication

Thank you