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ICT and communication: A network model and an exploratory application to the HIV/AIDS sector in Botswana

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- Theses
- Communication, Knowledge, Knowledge systems, and Knowledge management
- Networks and network analysis: A network model
- Case: HIV/AIDS sector in Botswana, Description
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Abstract and Theses

- Assess role & impact of ICTs by means of network analysis. That is, focusing on actors, their interests, and their ability to achieve goals

- Thesis 1: Networks have built-in imbalances that prevent free flow of information

- Thesis 2: ICTs tend to overlay such imbalances, and to reinforce them

Communication and knowledge

- What is communication?
- Communication before and today
- Communication and development cooperation
- Knowledge and knowledge mgmt.
- Knowledge systems
- Knowledge mgmt. and development cooperation
- Development theories and communication
- Communicating knowledge

A network model, I

- The beginning: Barnes and Norway
- Network and network analysis defined
- Elements of networks: Actors and links
- Later developments, I
  - Scaling up
  - Micro-macro rel.ships: Realities and models
  - Hannerz: Transnational cultures
  - Globalization

A network model, II

Later developments, II: The World Bank

- From actor to stakeholder

- Social assessment

  - Stakeholder analysis

    - Identifying key stakeholders
    - Determining importance and influence
    - Selecting representation

  - Organizational and institutional analysis

A network model, III

- **Characteristics of networks**
  - Structural characteristics
    - Size, Density, Composition
  - Interactional characteristics
    - Content, Direction, Stability, Frequency
- **Conceptual apparatus**
  - Individual level
    - Actor, Action, Category, Corporation, Cross pressure, Role, Role conflict, Status, Transaction
  - Societal level
    - Division of work, Institutionalisation, Integration, Culture, Norm, Process, Scale, Social structure, Social field, Social system

A network model, IV

- Types of network analysis
  - Individual-oriented approaches
  - Contextual approaches
  - Partial approaches
- Imbalances and power in networks

Case: Description, I

- Why the HIV/AIDS sector in Botswana?
  - Large foreign presence: Personnel, technology
  - Medical approaches and technology imported
  - Partly advanced use of ICTs
- Botswana statistics
  - Poverty and social indicators (source: World Bank; $\rightarrow$ slides 10-11)
  - ICTs (source: World Bank; $\rightarrow$ slides 12-13)
  - HIV/AIDS (sources: UNAIDS, NACP; $\rightarrow$ slides 14-15)

Case: Description, II

Botswana, Poverty and social indicators, I

Indicator	Botswana, 2000-2001	Sub-Saharan Africa, 2001	Upper-middle income, 2001
Population (millions)	1.6	673.9	503.7
GNI/capita (US $)	3,630	470	4,460
Average annual pop. growth (%)	1.7	2.5	1.3
Urban pop. (%)	49	32	77
Life expectancy (yr)	39	47	71

Case: Description, III
Botswana, Poverty and social indicators, II

Indicator	Botswana, 2000-2001	Sub-Saharan Africa, 2001	Upper-middle income, 2001
Infant mortality (per 1,000 live births)	58	91	24
Child malnutrition (%)	17		9
Access to improved water source (%)		55	87
Illiteracy (%)	22	37	10
Gross primary enrollment (yr)	108	78	127

Case: Description, IV
Botswana, ICTs, I

Indicator	Botswana 1995	Botswana 2000	Sub-Saharan Africa	Upper-middle income
Phone mainlines (per 1000)	41	93	14	190
Phone mainlines, large cities (per 1000)	168	180	33	202
Mobile phones (per 1000)	0	123	17	160
Daily newspapers (per 1000)	31	27	12	95
Radios (per 1000)	130	155	198	457

Case: Description, V
Botswana, ICTs, II

Indicator	Botswana 1995	Botswana 2000	Sub-Saharan Africa	Upper-middle income
Television sets (per 1000)	19	25	59	317
Personal computers (per 1000)	10.3	37.0	9.2	58.9
Internet users (thousands)	1.0	15.0	3,694.8	26,349.4
Internet, service provider access charge (per 1000)		14.7	35.6	20.4
Internet, phone user access charge (per 1000)		0.14	0.53	0.42

Case: Description, VI
Botswana, HIV/AIDS, I

- The HIV infection rate for the adult population is around 37 %

Case: Description, VII
Botswana, HIV/AIDS, II

Area	Site	1993 (%)	1995 (%)	1997 (%)	1999 (%)
Rural	Chobe	18.3	37.9	38.3	50.8
	Lobatse	17.8	38.9	33.7	31.3
	Malapye			28.2	32.0
	Serowe/Palapye			34.4	41.8
Urban	Francistown	34.3	39.6	42.9	42.7
	Gaborone	19.2	28.7	34.0	37.1

Case: Description, VIII

- Identifying stakeholders
  - Levels and sectors
    - Levels: International, local, national
    - Sectors: Civil society, private/commercial, public
  - Categories of stakeholders
    - *baprofiti* (prophets), BONASA, clinics, *dingaka* (healers), District Councils, doctors, donors, health centers, hospitals, international NGOs, Ministries, NACA, national/local NGOs, pharmaceutical companies, research institutions

Case: Description, IX

- Identifying links between stakeholders
- The resulting network
  - Centers of communication concentration
    - International level
    - Facilitating / mediating
    - National level
    - Local level
  - Types of stakeholder involvement
    - Determining
    - Recipient / end user

Case: Analysis, I

- Connecting stakeholders
  - Importance and influence ($\rightarrow$ slide 19)
  - Who is connected to whom? ($\rightarrow$ slide 20)
  - Importance and influence: Identifying the key players
  - What flows through the links, and in what direction?
- Stakeholders and use of ICTs ($\rightarrow$ slides 21-22)
  - A clear pattern (and not an unexpected one ...)
- Networks and sub-networks ($\rightarrow$ slide 23)
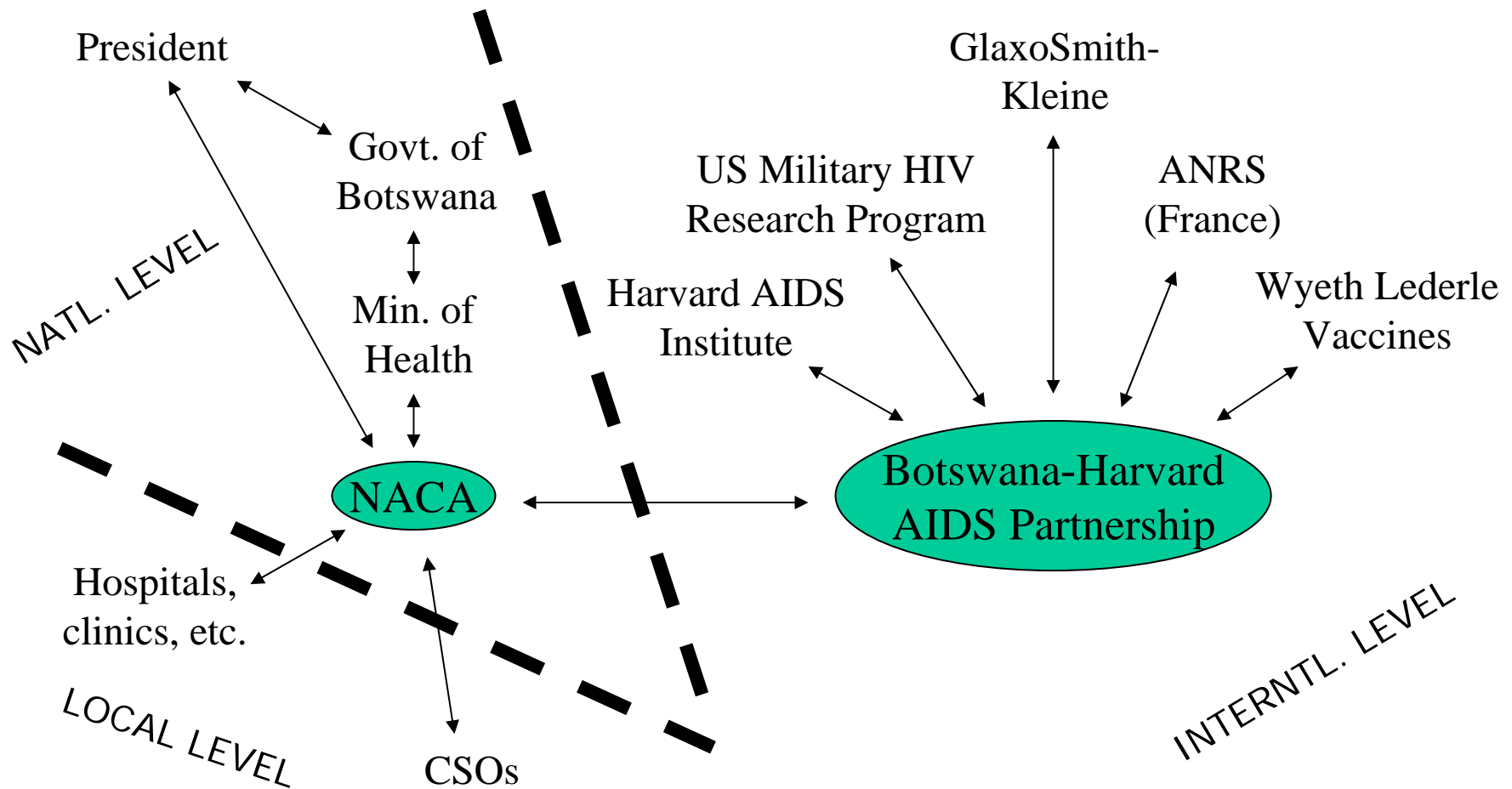 - Causes and explanatory factors
  - The role of ICTs

Case: Analysis, II
Stakeholders, rel. importance & influence

Influence of stake-holders	Importance of stakeholders			
	Un-known	Little / no importance	Some importance	Significant importance
Unknown				
Little / no influence			Civil society org. (CSOs)	The poor/ill, Local govt., *Dingaka*, *Baprofiti*, CSOs
Some influence				
Significant influence			Donors	Govt., Donors, Intl. expertice

Case: Analysis, III
Who is connected to whom?

President

GlaxoSmith-Kleine

Govt. of Botswana

US Military HIV Research Program

ANRS (France)

NATL. LEVEL

Min. of Health

Harvard AIDS Institute

Wyeth Lederle Vaccines

NACA

Botswana-Harvard AIDS Partnership

Hospitals, clinics, etc.

INTERNTL. LEVEL

LOCAL LEVEL

CSOs

Case: Analysis, IV
Stakeholders and use of ICTs, Levels

Level	Voice	Posters	Phone	Fax	Radio	Conf.	TV	Cell	E-mail	Inter-net
Local	√	√								
Natl.			√	√	√	√	√	√	√	
Inter-natl.			√	√		√		√	√	√

Case: Analysis, V
Stakeholders and use of ICTs, Sectors

Sector	Voice	Posters	Phone	Fax	Radio	Conf.	TV	Cell	E-mail	Inter-net
Civil society	√	√	√							
Public			√	√	√	√	√	√	√	
Private						√		√	√	√

Case: Analysis, VI
Networks and sub-networks

international sub-network

natl., modern sub-network

natl./local, trad. sub-network

Communication divide

Communication divide
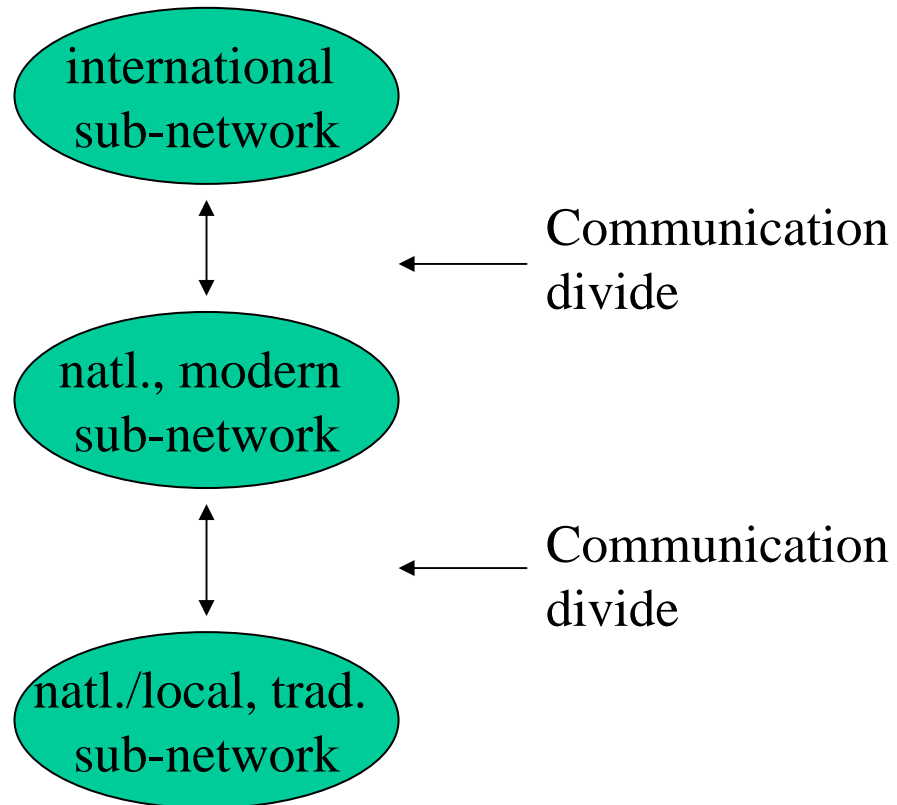
Conclusions, I

- Communication, cultures, and constraints
  - Existing communication bottlenecks
  - ICTs overlayed
  - Existing bottlenecks reinforced (and new ones created)
- Approach: Analyze context, that is, do a network analysis, before proceeding to plan and implement use of ICTs
- Consider the whole range of ICTs
  - ICTs to be optimally adapted to local situations
  - ICTs to *connect* people and issues, not the opposite

Conclusions, II

- A rethoric question: Do ICTs represent some-thing value-added to existing ways and means of communicating? If answer is "yes", proceed to adopt and adapt
- ICTs, communication, and models
- ICT and governance
  - Accountability
  - Transparency
  - Civil and political rights