



E-readiness assessment framework – a tool for institutional self-assessment

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Agenda

- The e-readiness assessment project for higher education institutions 2006-2011
 - Funded by the Rockefeller Foundation and Ford Foundation
- Networked readiness categories and example e-readiness frameworks
- Applications of the e-readiness framework and future extension to e-readiness index
- Q & A and discussions

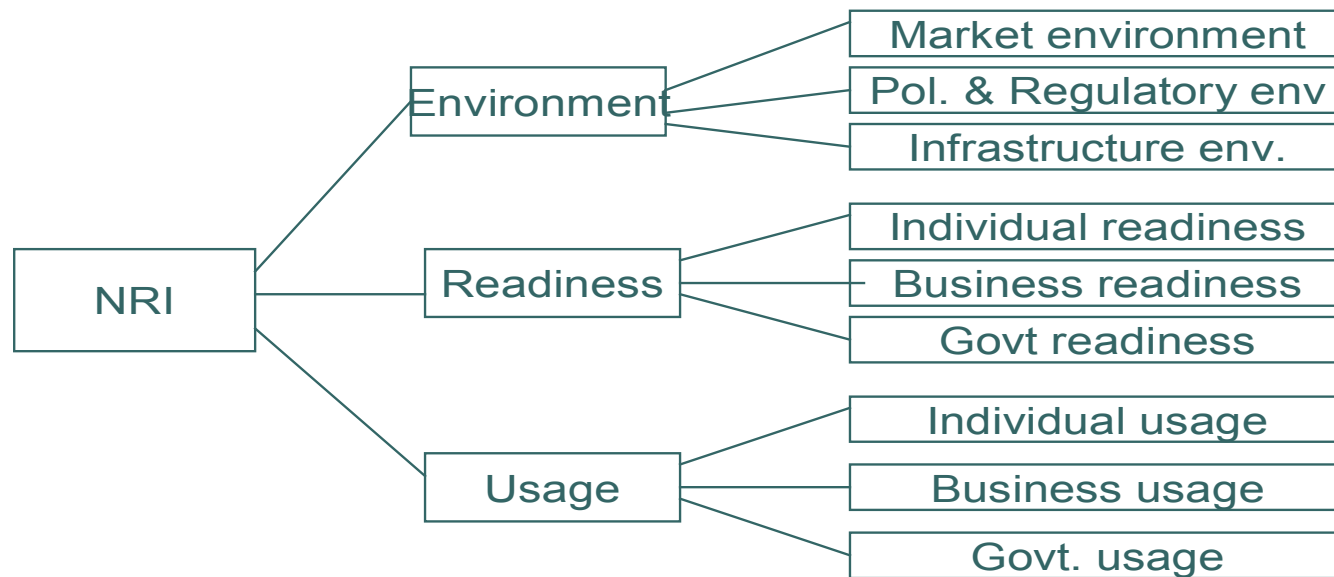
E-readiness assessment of Higher Education Institutions project

- Motivated by the need to communicate the institutional status of ICT to the higher education leadership
 - How will they know they are doing well?
- Diagnostic tool useful for self-assessment and part of SWOT analysis in ICT strategy review
 - An index does not tell institutions what they need to do.
- In 2006, four researchers thru' KENET received first grant from Rockefeller Foundation and Ford Foundation to conduct e-readiness survey
 - Part of the Partnership for Higher Education in Africa funding

Other E-readiness assessment frameworks

- AAU self-assessment tool developed in 2001
 - Researchers not aware of any Kenyan or EA university that had used the tool
 - Part of the problem was that it was qualitative and did not have specific targets for staging
- Center for International Development at Harvard University had developed the CID tool (www.networkreadiness.org).
 - Diagnostic
 - Involved staging 19 indicators
 - Developed for developing country communities (counties, countries, higher education?)
- Researchers had used the CID tool for the first e-readiness assessment of Kenya in 2001 funded by *Infodev*
- *Networked readiness index methodology adopted from CID tool and uses 48 sub-indicators (World Economic Forum)*

Networked Readiness Index



Source: GIT report 2003-2004

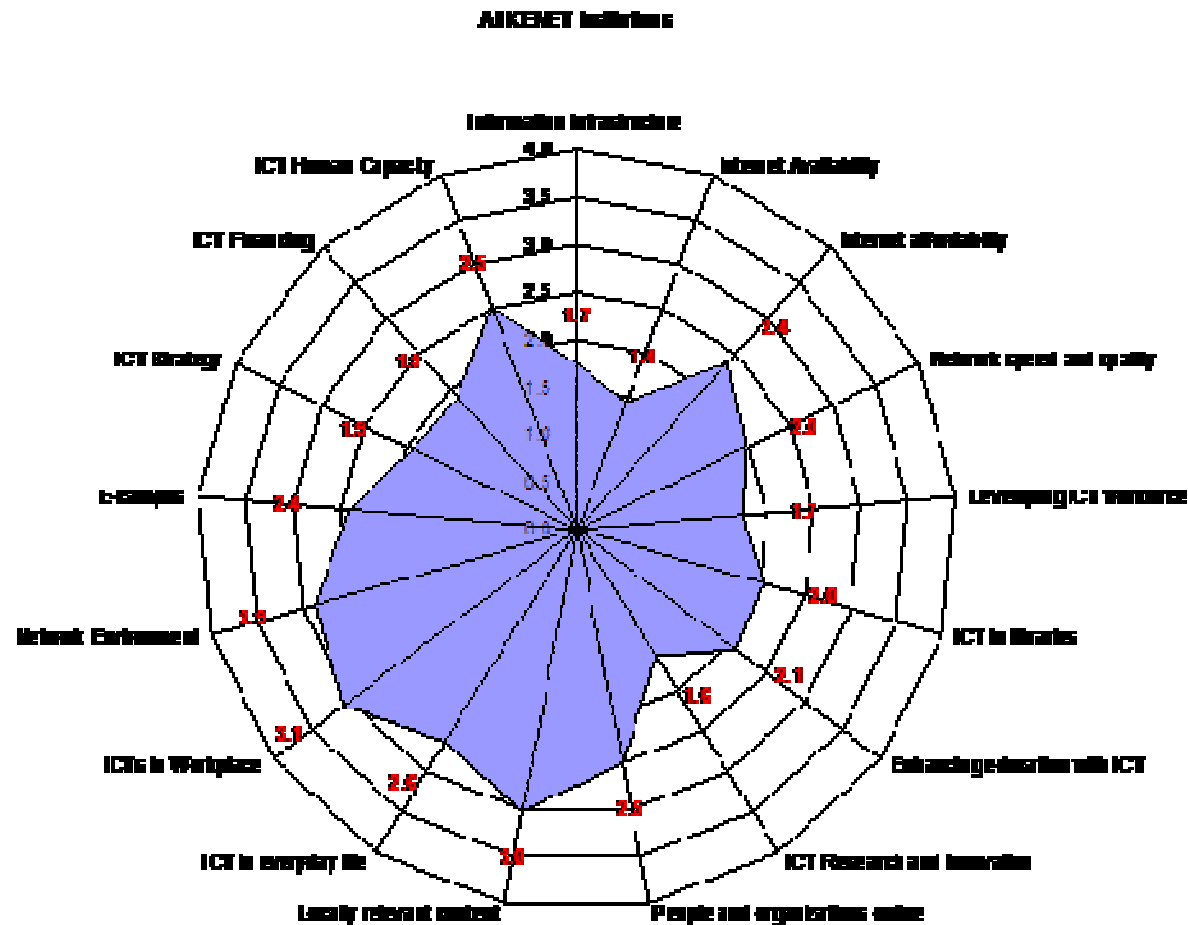
E-readiness framework for higher education

- Based on the staging framework of CID tool but..
- Indicators reduced from 19 to 17 and
- *88 new sub-indicators unique to higher education* defined and used to calculate the 17 indicators
- Required both hard facts and perception data from users of ICT (faculty, staff and students)
- Data collected valid for both individual institutions and the community in aggregate form

Impact of E-readiness Survey of 2006

- The senior leadership in the universities and Ministry of Education understood the results
 - Ford Foundation funded a ICT strategy brief that was distributed to VCs and Permanent Secretary Ministry of Higher Education
- PHEA reviewed the first report and Rockefeller Foundation then funded EA accession of 50 universities
 - Results have been disseminated in the 5 EA countries

Staging for all 25 KENET institutions



E-readiness assessment framework

- Derived from the CID (Harvard) E-society tool, AAU self-assessment tools and experience of researchers
- 17 indicators groups as follows:
 - **Network access indicators** (4 – Information infrastructure, Internet availability, Internet affordability, Network speed & quality)
 - **Networked campus indicators** (2 indicators - Electrical power & Security, E-campus)
 - **Networked learning indicators** (4 – Enhancing education with ICTs, Developing the ICT Workforce, ICT in Libraries, ICT research and innovations)
 - **Networked society indicators** (4 indicators – Locally relevant content, People and Organizations Online, ICTs in Everyday life, ICTs in Workplace)
 - **Institutional ICT strategy** (ICT strategy, ICT financing, ICT Human Capacity)
- Stage each indicator on a scale of 1-4 for each indicator (unprepared to ready)

Network Access

Network Access Indicators

- *Information Infrastructure* - internal and external teledensity
- *Internet availability* - PCs per 100 students & Internet bandwidth per 1000 students
 - Target 1:10 PC ratio and 1 Mb/s per 1000 students
- *Affordability* - Internet bandwidth cost per 1000 students
 - Stage 1 - < \$13,000 per year; stage 4 - > \$37,000 per annum
- *Network speed and quality* - % stated campus e-mail works, % consider campus speed better than cyber cafes

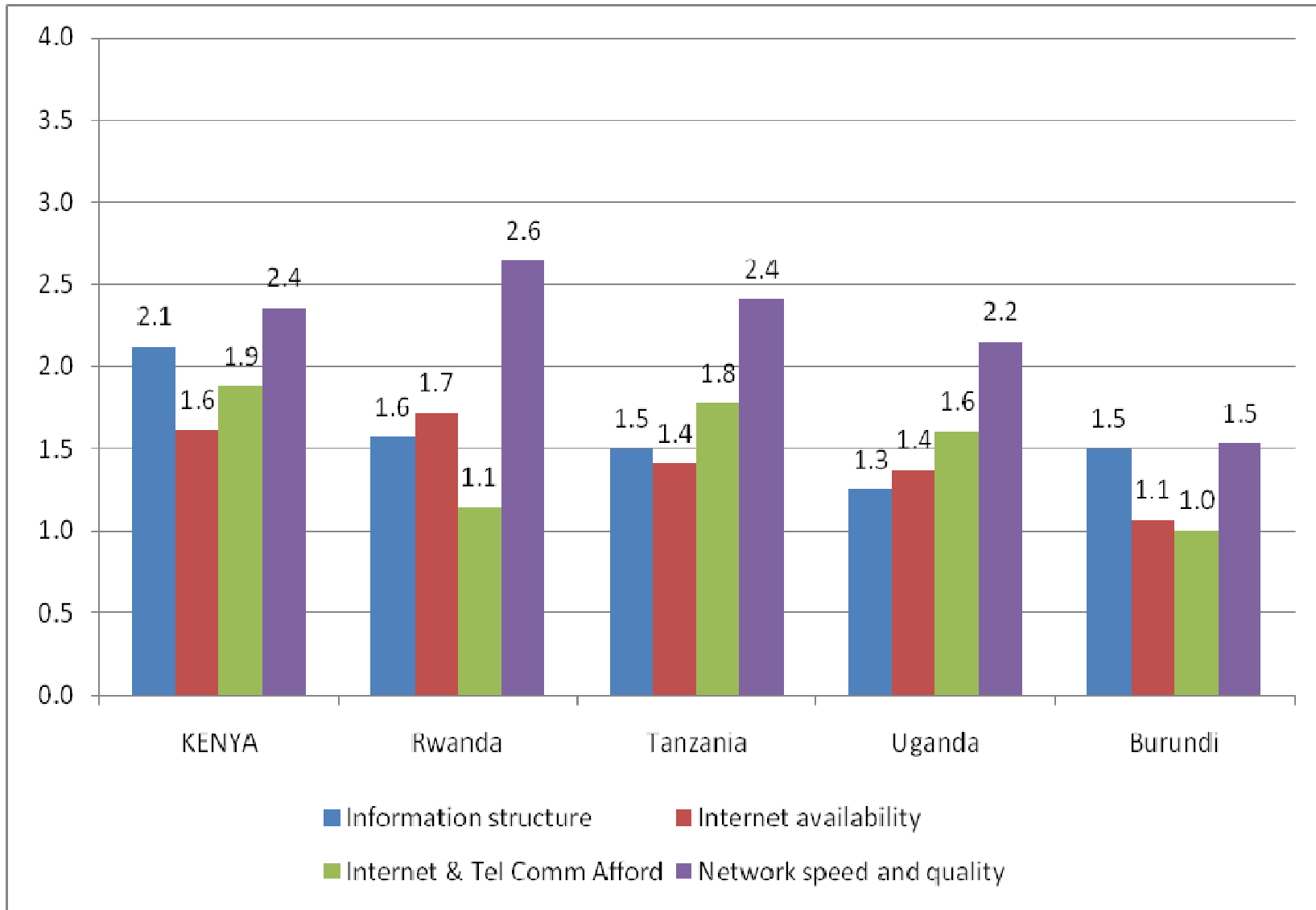
Internet availability staging framework

Stage	Uplink BW	Downlink BW	PCs per 100 users
Stage 1	<128 kb/s per 1000 students	<512 kb/s per 1000 students	<5% per 100 users
Stage 2	128-512 kb/s per 1000 students	512 - 2047 kb/s per 1000 students	5-19% per 100 users (1:20 to 1:5 PCs)
Stage 3	512 - 1024 kb/s per 1000 students	2048 - 4095 kb/s per 1000 students	20 - 49.9% (1:5 to 1:2)
Stage 4	>= 1024 kb/s per 1000 students	>= 4096 kb/s per 1000 students	>50% (1:2)

Internet affordability

Stage	Annual Internet Budget in USD
Stage 1	<13,000
Stage 2	13,000-25000
Stage 3	25,001-37,000
Stage 4	>37,001

Network access (EA comparisons)



Internet availability indicators in 2008

Country	No. of varsities	Total students	Total students PCs	Total Bandwidth	BW per 1,000 students	PCs per 100 students
Burundi	5	20,537	308	2,368	115	1.5
Kenya	17	162,319	8,544	70,764	436	5.3
Rwanda	7	32,450	2,367	31,512	971	7.3
Tanzania	9	41,816	1,130	17,240	412	2.7
Uganda	10	95,550	6,489	29,716	311	6.8
Total	48	352,672	18,838	151,600	430	5.3

Networked Campus

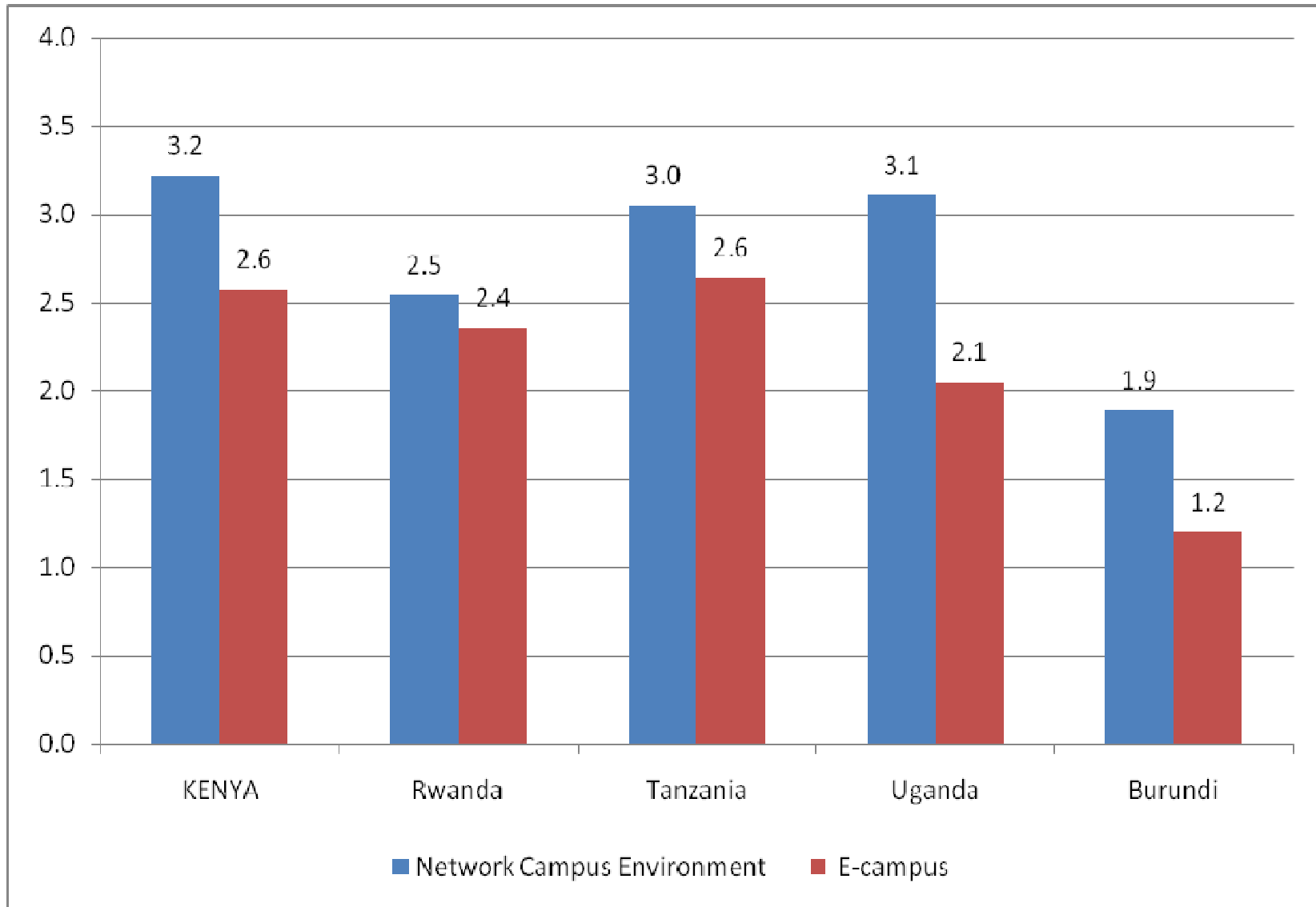
Networked campus indicators

- *Networked environment*
 - ICT power supply
 - ICT physical and logical security
 - disaster recovery plan
 - quality of support staff
- *E-campus* - measures degree of automation in campus and online interaction with external and internal customers/suppliers
 - % of on-line interaction
 - integrated MIS
 - frequency of website updates

E-campus staging framework

Stage	% of units with websites	Frequency of updating websites	Extent of online interaction	Level of integration of IT systems
Stage 1	<25%	Never	Never	<25%
Stage 2	25-50%	Annually	Rarely	25-50%
Stage 3	50-75%	Monthly, Quarterly	Sometimes	50-75%
Stage 4	>75%	Daily, Weekly	Mainly	>75%

Networked campus (EA)



Networked Learning

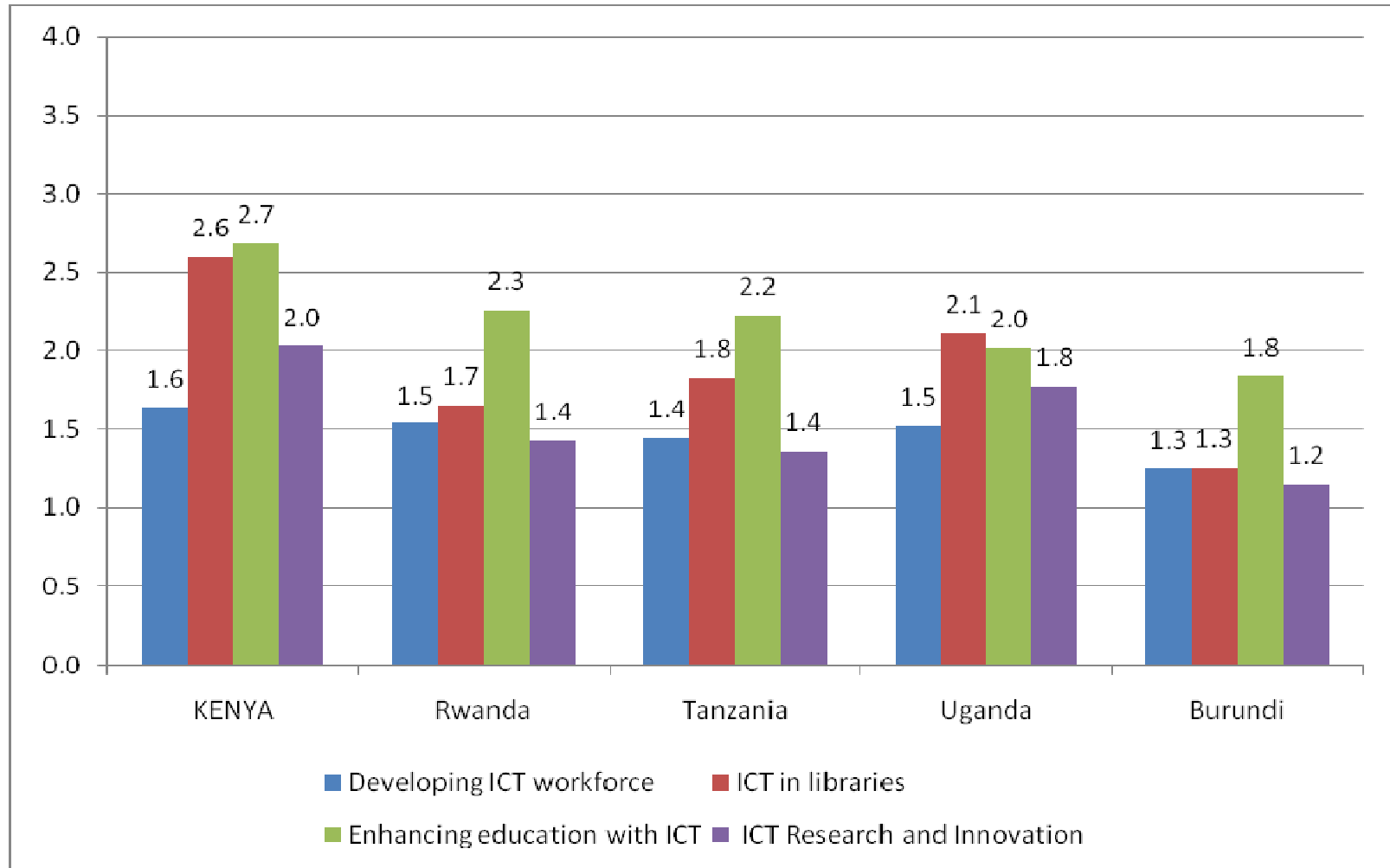
Networked learning indicators

- *Enhancing education with ICT* (integration of ICT in curriculum, ICT in student projects, educational software, course management)
- *Developing ICT workforce* (faculty and support staff being trained by university on use of ICT?)
- *ICTs in libraries* (OPAC, multimedia centers, % PCs in library, Internet databases, etc)
- *ICT research and innovation* (ICT project competitions, Graduate ICT programs)

Enhancing Education with ICT Staging Framework

Stage	Educational software	Learning Management System	Integration of ICT in curriculum	ICT use in classrooms	ICT in Projects
Stage 1	No	No	No	No	No
Stage 2					
Stage 3					
Stage 4	Yes	Yes	Yes	Yes	Yes

Networked learning indicator staging in EA

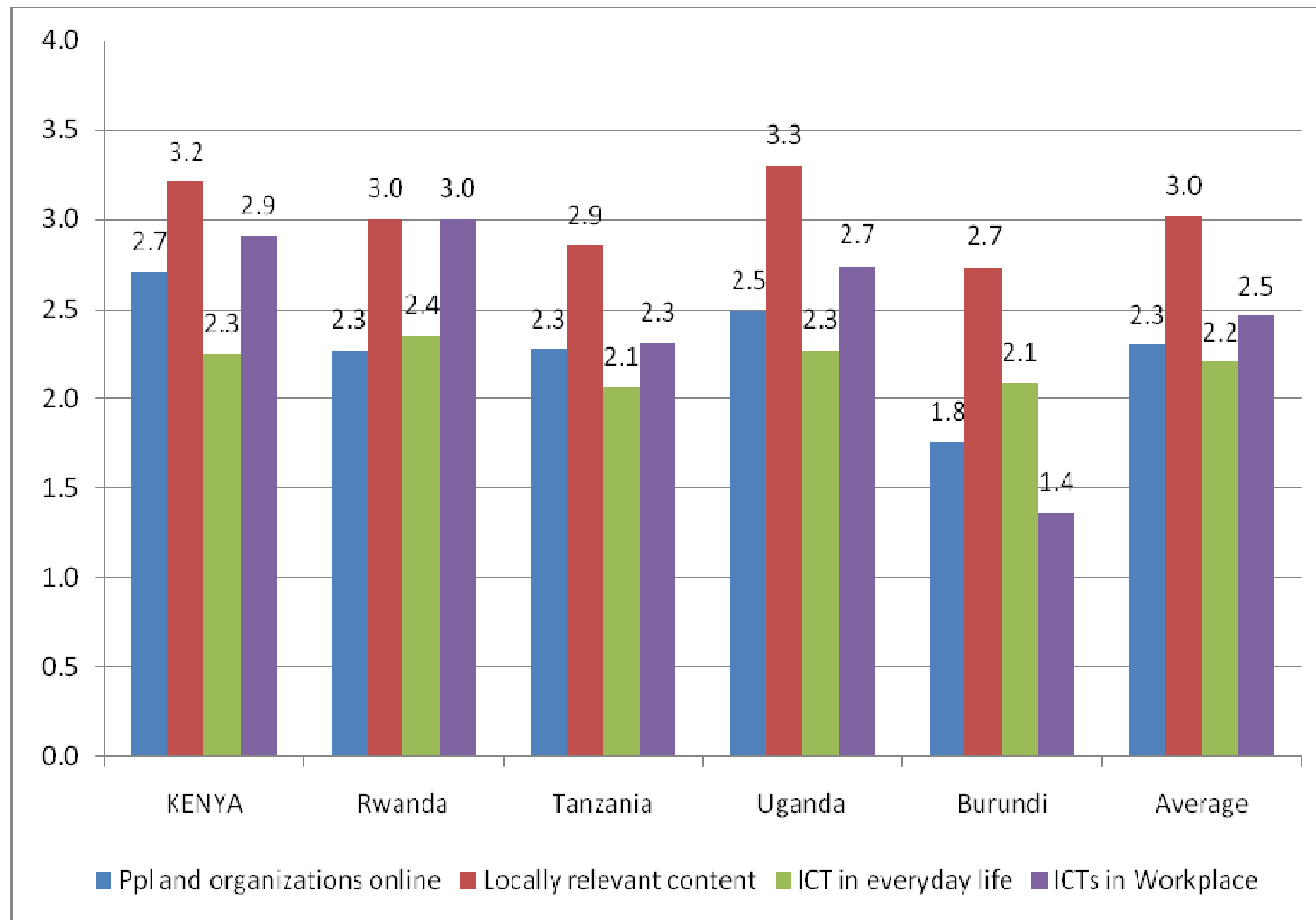


Networked Society

Networked society indicators

- *People and organizations online* (measures use of ICT by community in learning, research, news, and entertainment)
- *Locally relevant content* (% of community using local or in country websites daily -)
- *ICT in everyday life* (mobile internet, PCs, cyber cafes, and use by students)
- *ICT in workplace* (use ICT in classrooms, research, communications)

Networked society country comparisons



Institutional ICT Strategy

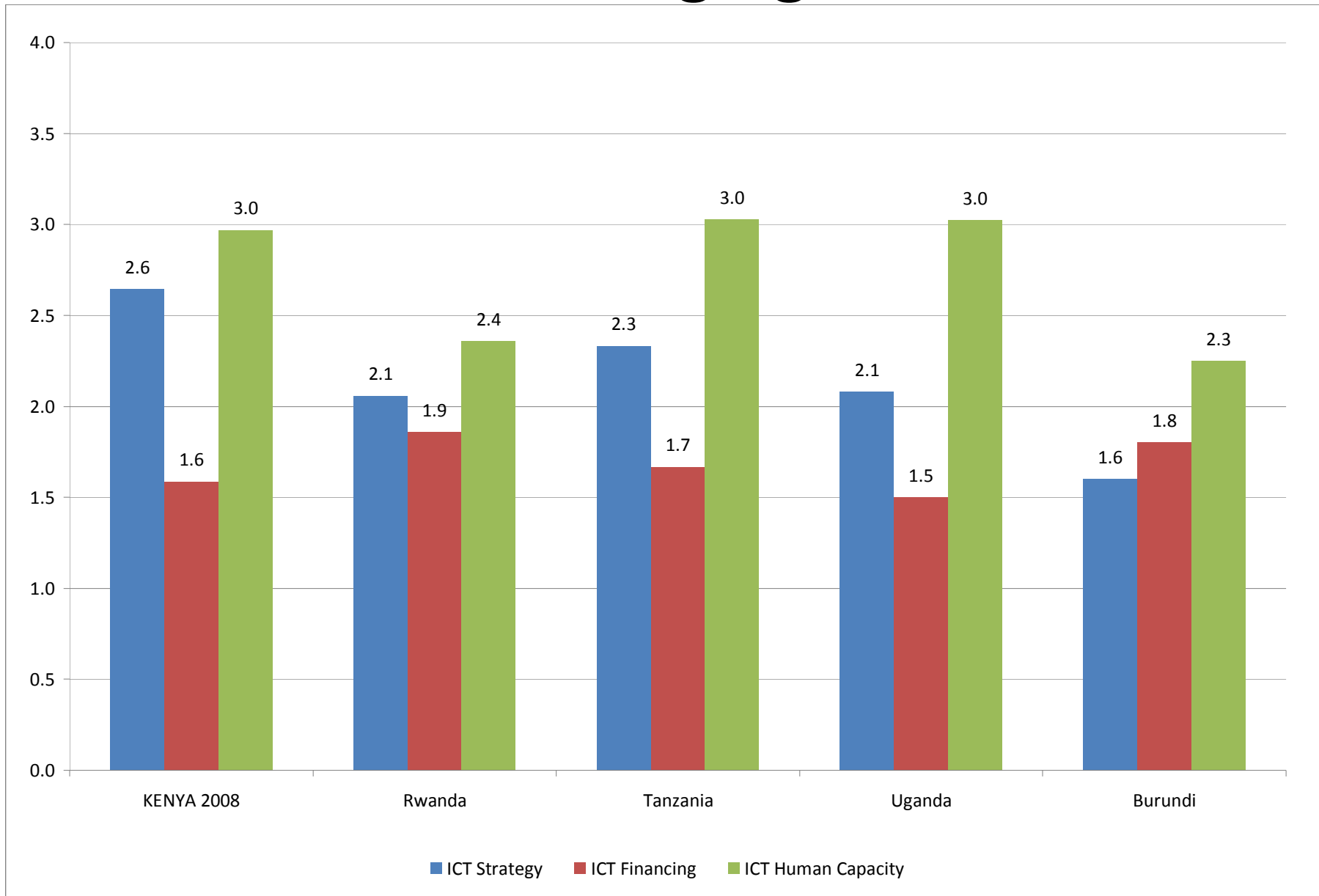
Institutional ICT Strategy Indicators

- *ICT Strategy* (Alignment of ICT strategy with university strategy, Extent of ICT strategy implementation, Championship of ICT, Title of Head/ICT, Reporting level of Head/ICT)
- *ICT Financing*
 - Internet BW cost as % of institutional expenditure
 - Proxy for ICT expenditure!
- *ICT Human Capacity*
 - Highest qualification of Head/ICT
 - Years of admin experience of Head/ICT
 - % of professional ICT staff retained for over 3 years
 - Frequency at which ICT staff upgrade their skills

ICT strategy staging framework

Stage	Title of Head of ICT	Reporting level	ICT champion	Extent of ICT implementation	Alignment of ICT strategy
Stage 1	Technical person	Head of department (Admin)	Head of academic department	<25%	<25%
Stage 2	Head of department	Dean/ Director	Dean/ Director	25-50%	25-50%
Stage 3	ICT Manager/Operations manager/ICT Director	DVC/ Principal	ICT Director/ Principal	50-75%	50-75%
Stage 4	Executive Director/DVC IT	VC/CEO	DVC or VC/CEO	>75%	>75%

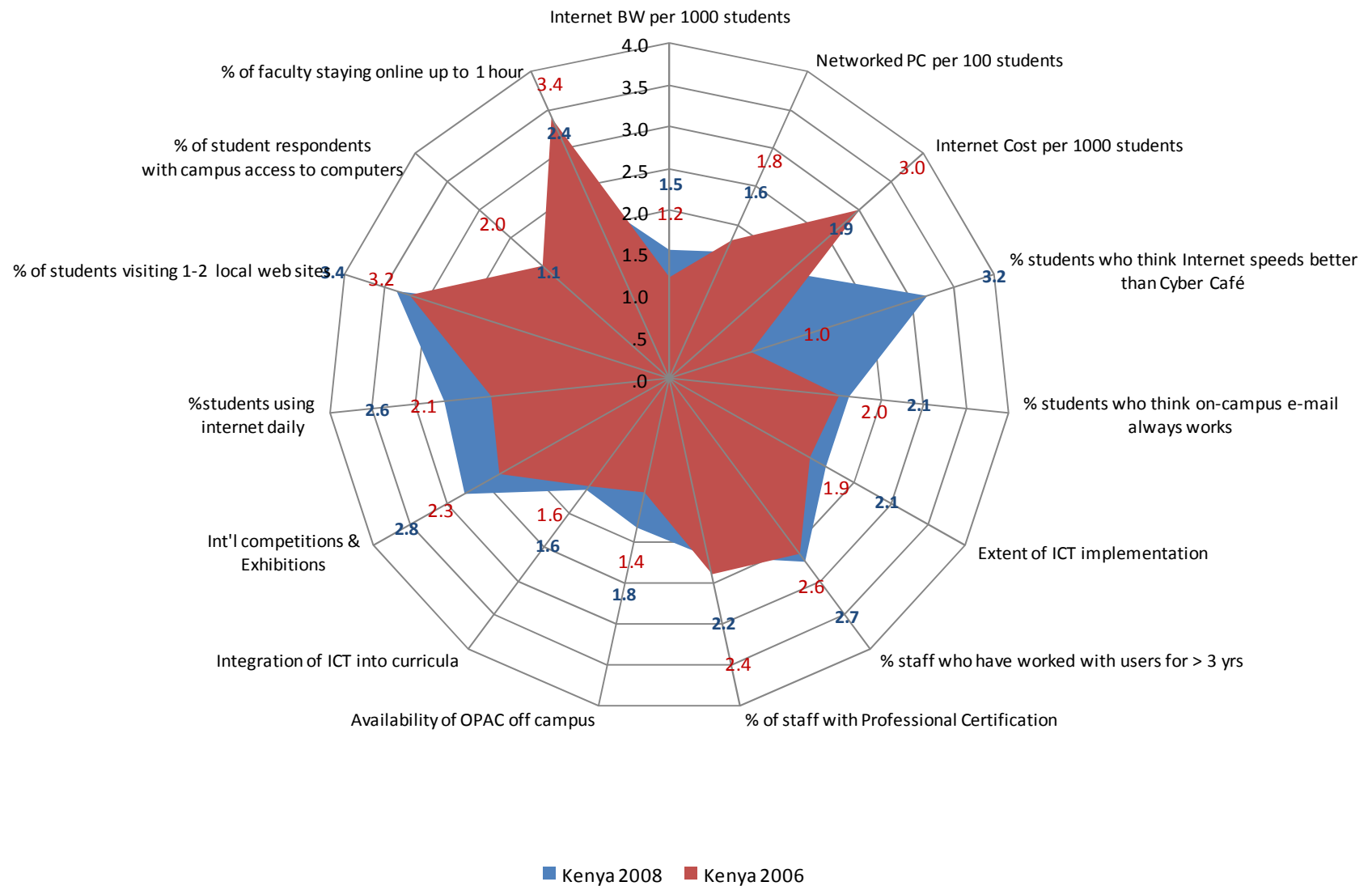
EA staging



Conclusions on Institutional ICT Strategy

- **ICT Strategy**
 - ICT still not a strategic resource (poor ICT-corporate strategy alignment, poor implementation of ICT strategy, low profile of ICT function, low championship of ICT)
- **ICT Financing**
 - Internet BW expenditure very low → low ICT budgets
- **ICT Human Capacity**
 - Have capacity to support large-scale ICT deployment (but limited by other issues, esp. campus infrastructure, ICT-corporate strategy alignment, ICT budgets)

KE strategic sub-indicators staging



Recommended subset of strategic sub-indicators

1. Internet bandwidth cost per 1000 students (Measure of affordability)
2. Internet bandwidth per 1000 students
3. PCs per 100 students
4. Extent of ICT strategy implementation
5. Integration of ICT in curricula

Conclusions

- Universities lacked simple ICT indicators for measuring ICT readiness and usage
 - Recommend 5 strategic indicators
- Hard facts and perceptions required for all 17 indicators
 - Collecting perception data expensive!
 - Easy for ALL institutions to collect hard facts as part of institutional assessment
- Accession of the Institutional ICT Strategy indicators is correlated to accession of the Networked Learning indicators
- Universities need to track e-readiness on an annual basis – use tool with only hard facts

Questions & Answers

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E-readiness assessment frameworks

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