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**The meaning of
convergence in the
expanding Internet
a prospective view from Africa**



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Where is Africa ?

Region	Population (x1M)	Fixed + Mobile (x1K)	Tele-density (per 100)	Internet Users (x1K)	Internet User Penetration (per 100)	Internet Subscribers (x1K)
Africa	922.3	233502.2	25.32	45557.2	4.8	11307.5

Source: ITU/AU 2006 Telecommunication stats



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Cost of Divergence to Africa

- **Threat of deepening Digital divide – Africa statistics lowest**
- **Investment in divergent Infrastructure for countries with average GDP per capita of \$1016 (2005) and GDP 6.1% (2005) would be a strain**
- **Different policy environments for the different Infrastructure (telecommunication, Internet, broadcasting) can become complex**
- **Lack of technical and policy capacity to manage the varied Infrastructure is barrier**
- **Global services remain a challenge for Africa**



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Internet Convergence

Advantage

- **One open and transparent network Infrastructure permits transparent**
 - **Interconnection, user interface connect**
- **Divergence in services encourages innovation at the edges**
- **Simplifies the technical skills needed and invest in single infrastructure**
- **Have a single bottom-up policy regime for Infrastructure**
- **Participation on common global Infrastructure would become possible**



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Benefits to Africa

	Traditional	Internet Convergence
Edge capability	fixed	unbounded
Innovation	Center centric	Edge centric (participation)
Knowledge to use	low	Varied low to high
Interconnection	"Agreement"	CCC
Policy process	Top down	Bottom-up
Standards	Mandated	Open



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Migration to Convergent Internet Infrastructure

- **Not uniquely solved by policy environment alone. Need Internet technical community and other stakeholders for adoption of Infrastructure**
- **Need to empower the African technical community to increasingly grow itself, as skills are gained to accelerate migration to convergent Infrastructure in our region**



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The Next/Other Billion

challenge

- **Technology development for The Next billion and the Other Billions – Future Internet (these will be different from first billion)**
- **Increasingly multilingual, new cultures, require more basic training and very multimedia**
- **Paradigm shift on access (from computer to include mobile phone)**
- **Infrastructure development for The Other Billions – survive fragile networks**



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Technologies needed for The Other Billions

- **Disrupt/Delay Tolerant Network (DTN) opportunity**
- **Wireless network – frequency as critical resource**
- **Storage network (reliable delivery responsibility of Application Data Units, stored bundles)**
- **(Low Cost) Access Device & Simpler User interface (grandma) & low power**



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Conclusion

- **Adoption of a convergent Internet Infrastructure would extend investment, is efficient and promotes diverse development at the edge – Africa has little legacy infrastructure**
- **Connecting the next/other Billion is the real challenge**



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