

Imagining the future...  
...Making **it** happen

Rohan Samarajiva  
WSO2CON  
14 September 2010

# Dream, 2002

## Open source niche Sri Lanka

- Imagined

- Communicated

*Looked inside, not at actions of the small-minded who tried to hijack idea*

# Follow through

## Lanka Software Foundation in 2003

- *Public-private partnership model with Board representing*
  - All universities with IT strengths
  - Private sector
  
- *Pragmatic*
  - Not religious about open-source practices
    - Bazaar did not work; went to cathedral

# Delivered, 2010

**~100 Apache** committers, contrasted with

- *1 in 2002*
- *Only a handful from India now*

**5 Apache** Members, contrasted with

- *0 in 2002*
- *0 from India now*

**Google Summer of Code**

- *Sri Lanka among top-10 of awardee numbers each year*

**Sahana**, world's leading disaster-management software suite

- *Incubated; launched as independent entity in 2009*

# Dream, 2003-04

Sri Lankan companies exploiting niche advantage

- *Imagined*

- *Communicated*

# Follow through

Promoted through Lanka Software Foundation

- No significant take-up

No blame to others

Built

- WSO2 in 2005

# Delivered, 2010

~100 employees

Revenue doubling each year for last 4 years

USD 6m venture capital raised; company break-even now

– *Those in the know marvel at what has been done with just USD 6m*

On track to high revenue/employee

– *Currently around USD 40k, already level with Indian firms, but lower than*

- Google ~ USD 1000k
- Microsoft ~ USD 500k
- IBM ~ USD 250k

– *But positioned to break from pack and move toward leaders because not selling people hours, but product backed by people*

Imagining **e South Asia**, a few  
decades into the future



Dream: South Asia no longer periphery but  
core of global knowledge economy

Cheap plentiful data storage in safe conditions on  
southern slopes of Himalayas

“Silk Route 2.0” comprising massive transmission  
capacity across continent and Indian Ocean

Economic integration of South Asia

Pre-eminent knowledge production and replication  
centers as in days of Nalanda, Taxila, Abhayagiri &  
Vikramashila

# Google server farm in Bend, Oregon



Why Oregon?

Among others, Bonneville OR, 1092.9 MW



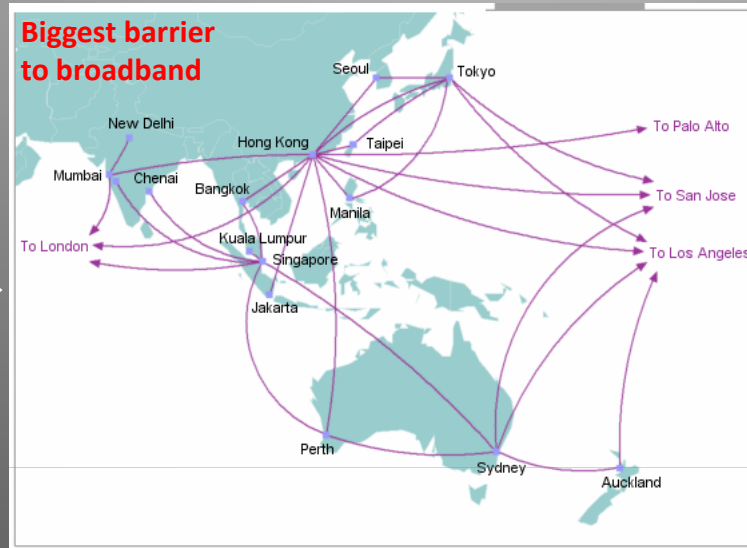
# Bhutan's Tala Hydropower Plant: 1020 MW



# Indian Ocean least well served with undersea cables

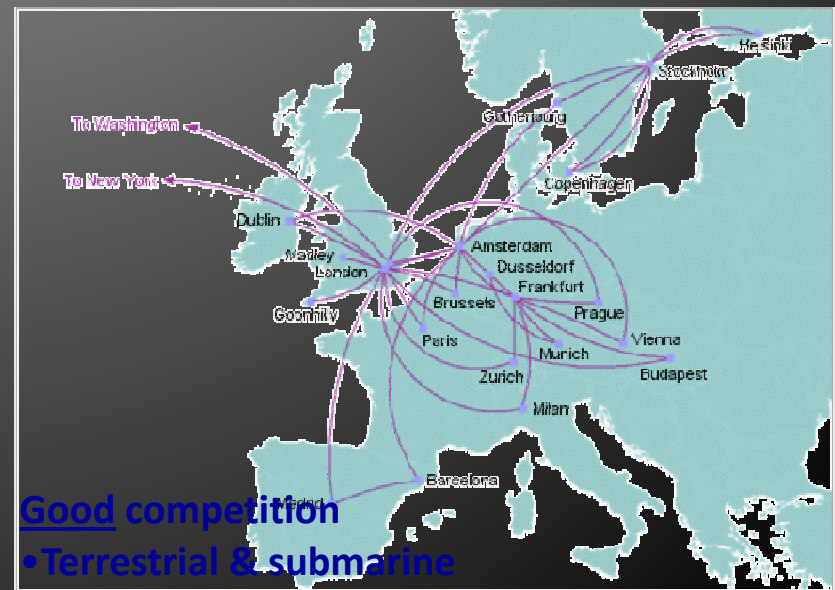
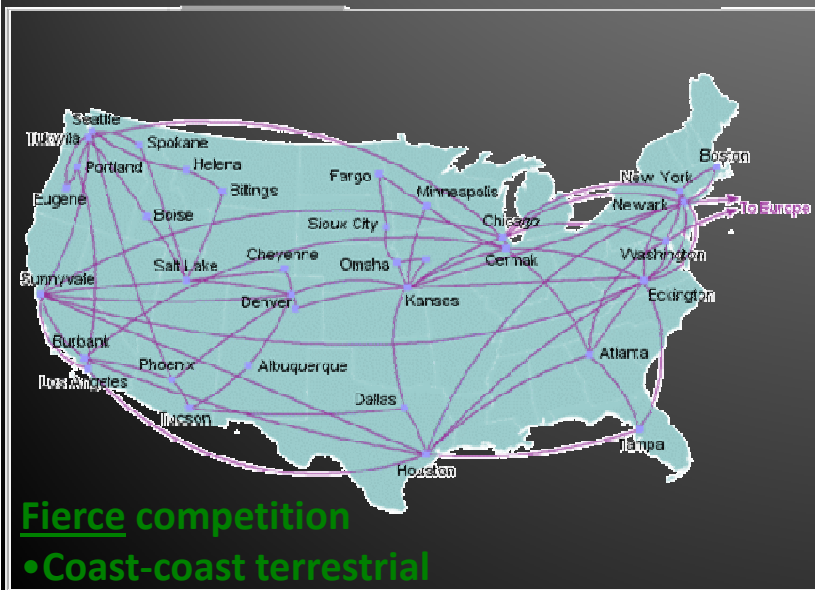


# Asia uncabled on land, compared to Europe & N America



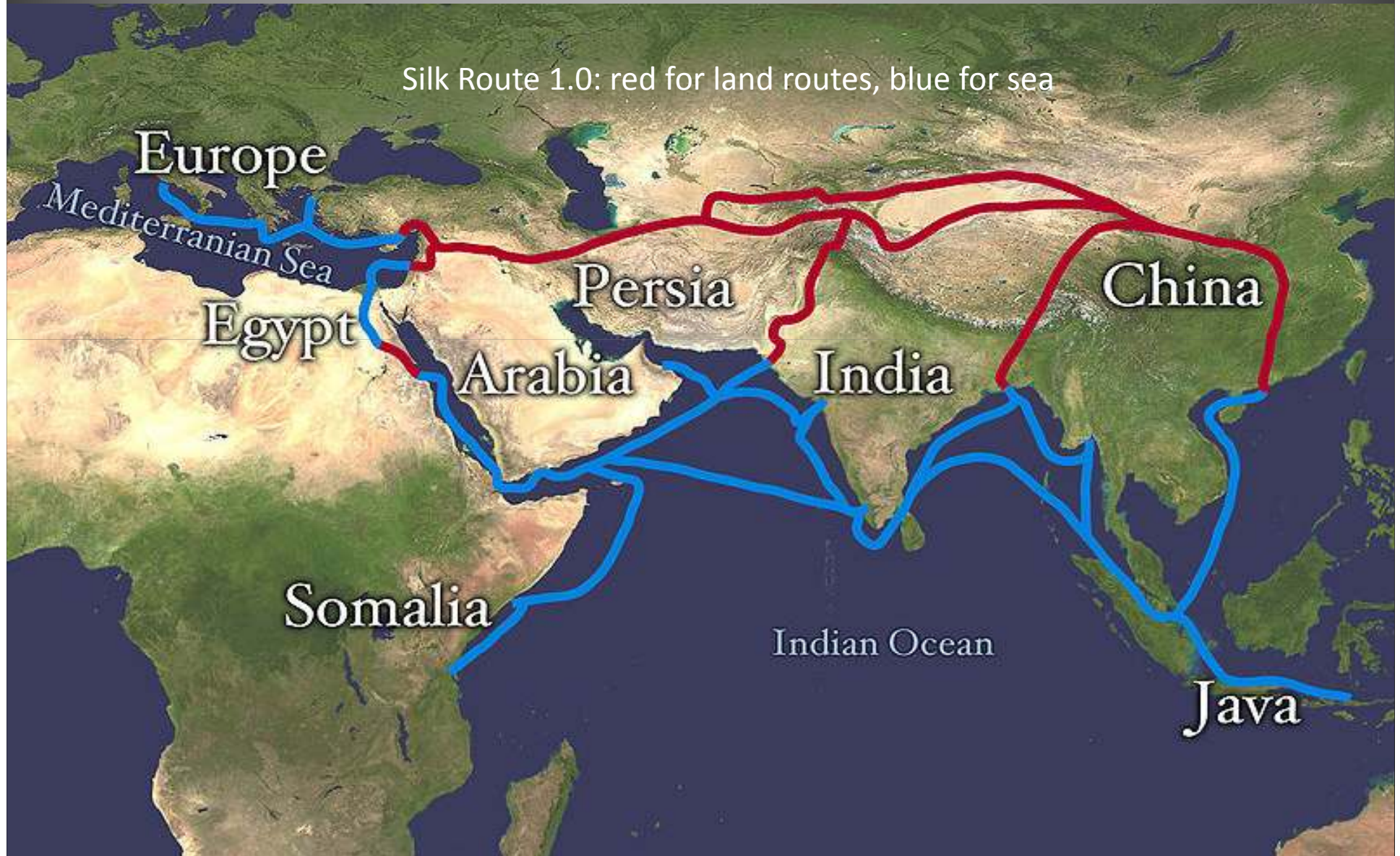
**Poor competition**

**All submarine**





# Why not “Silk Route 2.0”?

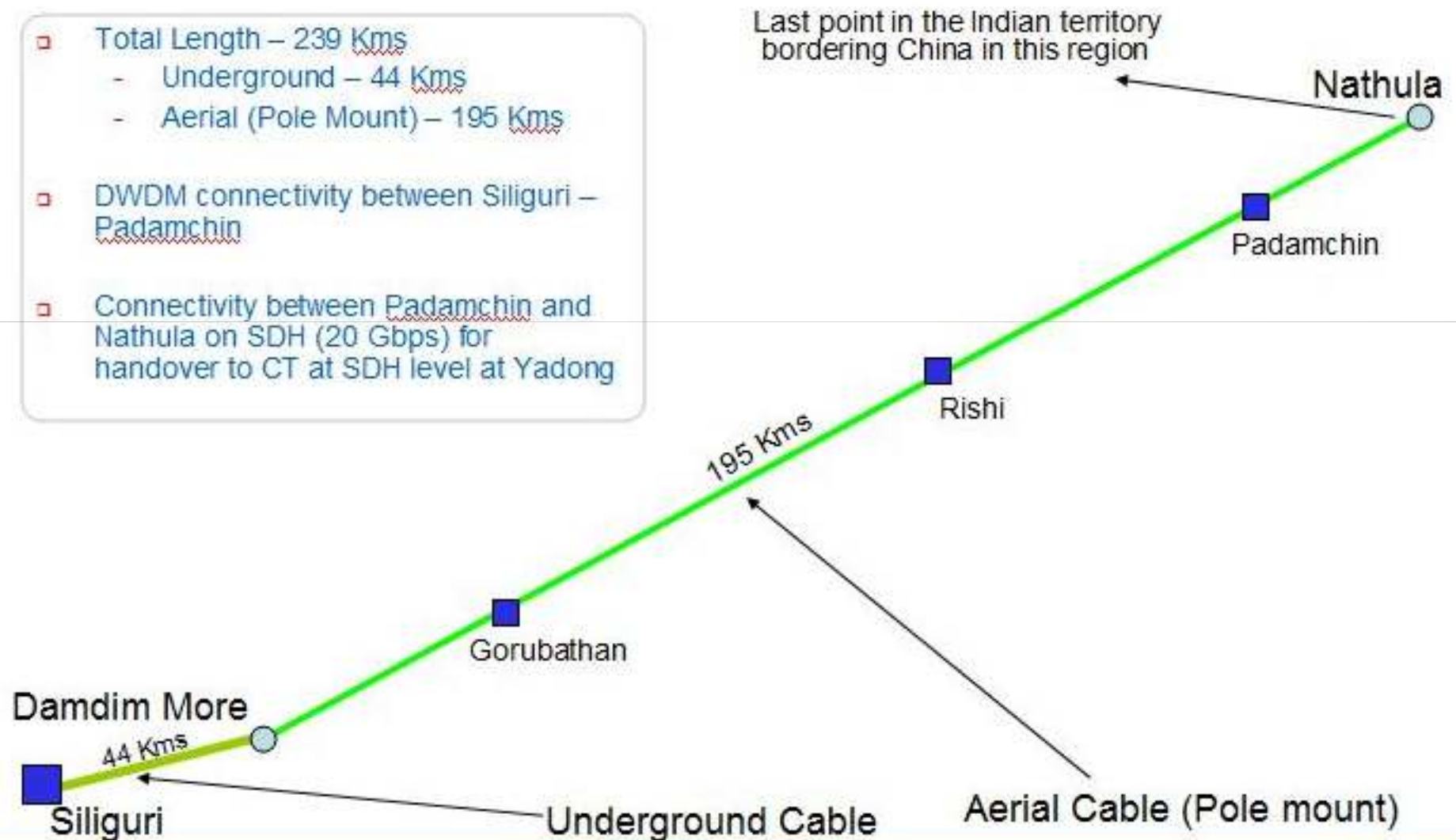


Terrestrial connectivity is beginning . .



## Siliguri – Nathula Connectivity

- Total Length – 239 Kms
  - Underground – 44 Kms
  - Aerial (Pole Mount) – 195 Kms
- DWDM connectivity between Siliguri – Padamchin
- Connectivity between Padamchin and Nathula on SDH (20 Gbps) for handover to CT at SDH level at Yadong



# “Silk Route 2.0”

## Imagine

- *More terrestrial*

- If India can connect to China via Tibet, what is not possible?

- *Lots more undersea*

- Most of world's undersea cables now owned by Indian companies, Tata and Reliance (Flag), bought at fire-sale prices in dot.com crash

# VSNL + Teleglobe + Tyco → Tata



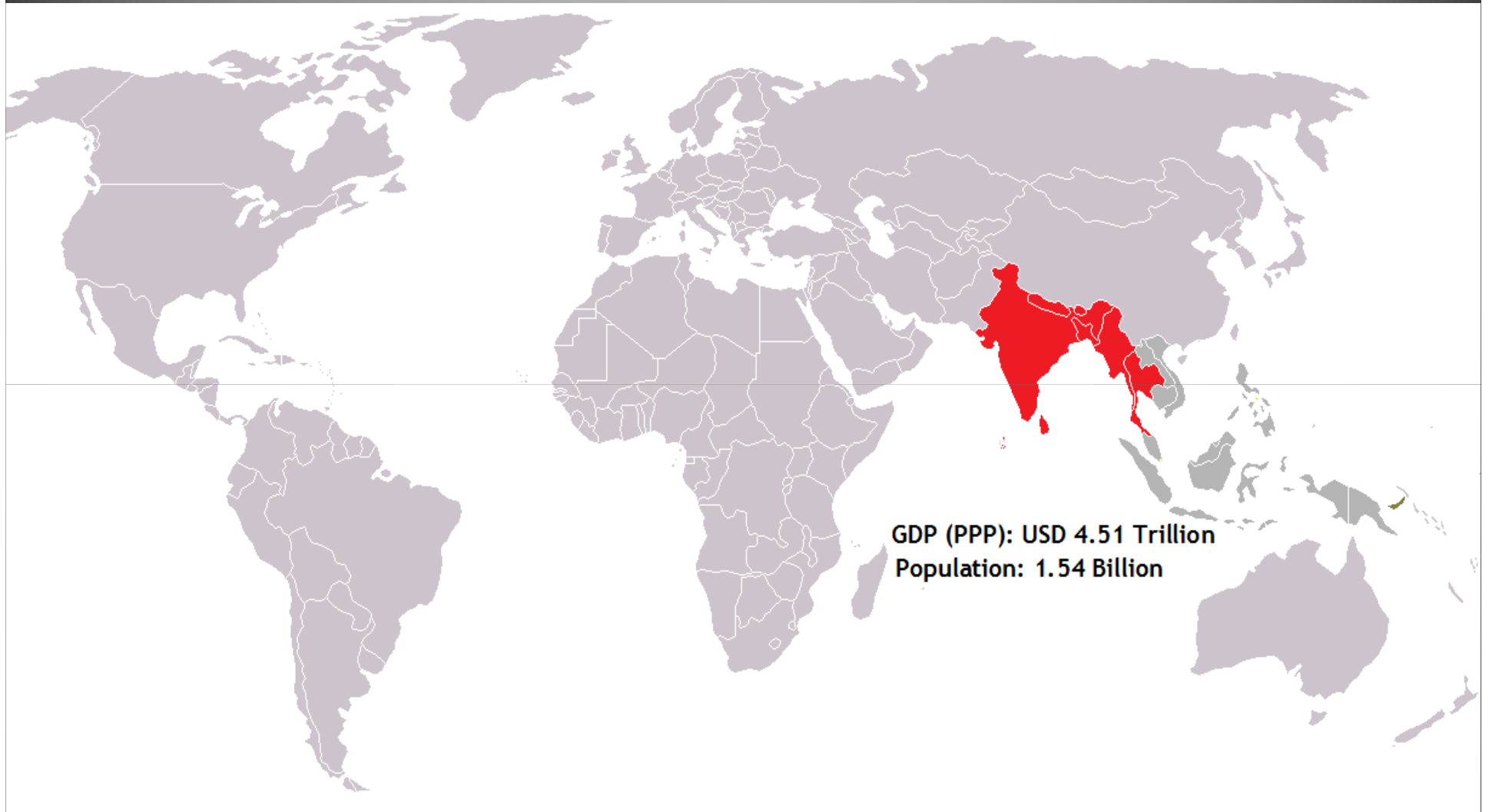
# South Asia: integrated...

Greater South Asia, defined by the Bay of Bengal

- *CEPA for a start*
- *Peace across the Padma*
  - Alleviate tensions between India and Bangladesh
- *Nepal rid itself of retrograde royals; now must rid itself of Maoists/ or Maoists must become like those in China*
- *Burma/Myanmar must come home to South Asia*
- *Thailand must integrate with region*

Region drives home the service advantage over China's manufacturing advantage

# South Asia: ...specializing in services



Data Source: IMF (2010) World Economic Outlook Database

Bits do not a **knowledge hub** make

Recreate the proud heritage of Nalanda-Taxila-  
Abhayagiri-Vikramashila

Knowledge must be generated

- *Applied to agriculture, water management, healthcare, disaster risk reduction, smart manufacturing . . . .*
- *Exported*

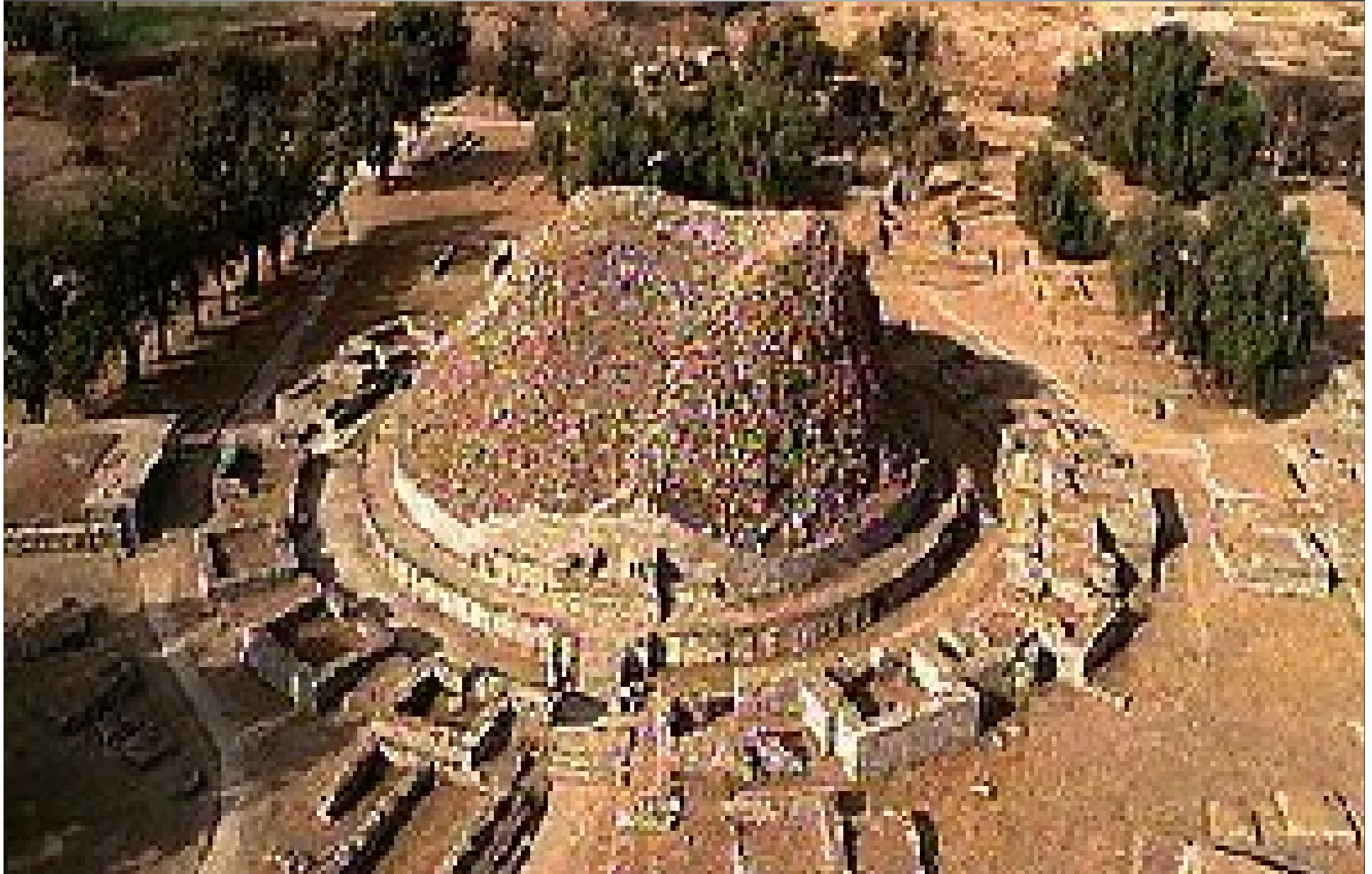


# Nalanda (World's leading university, 427-1197 CE) today





# Taxila (where Kautilya taught) today



# Abhayagiri, Sri Lanka's world university, today



# Nalanda 1.0

## Knowledge hub 427-1197 CE

Center of an Asia-wide network: China, Sri Lanka, Indonesia  
10,000 residential students with hierarchy based on knowledge

- *To the more learned more facilities were given*

Supported by 200 villages endowed by kings

### Curriculum

- *Adhyatma vidya (inner science)*
- *Hetu vidya (logic, epistemology, debate)*
- *Sabda vidya/Vyakarana (linguistics, language)*
- *Cikitsa vidya (medicine)*
- *Silpastana vidya (arts & crafts)*

### Admission

- *Strictly on merit; based on examination that turned away 7 out of 10*
- *Caste not an issue; not being a lay person not disqualification*

# Abhayagiri 1.0

## Knowledge hub, 5-8 centuries CE

Faxian (Fa-hsien) spent two years studying Dhamma at Abhayagiri in 412 CE

- *Carried away copies of texts including "Rules of the Mahisasakas," "Dirgagama," the "Samyuktagama" and the "Sannipata", all not known in China.*

By 7th century CE, Abhayagiri Vihara was a religious and educational institution with ties to China, Java and Kashmir

- *Contacts recorded between Sri Lanka and Java at the end of 8<sup>th</sup> Century CE in fragmentary inscription from Ratubaka plateau in central Java*
  - Records the establishment of the Abhayagiri Vihara of Sinhalese ascetics

# 12<sup>th</sup> Century AD: Asia's torch passes to Europe

Nalanda's destruction in 1197 CE (also its spin off Vikramashila) coincided with rise of modern university in Bologna (1158 CE)

- *According to legend, Bakhtiyar Khalji asked one question “how many copies of the Quran were in the library?”*
  - The answer was none
- *Nalanda had so many books that it burned for three months*

Roughly the same time Polonnaruwa goes down for good

Today what universities do we have?

2009 Times Higher Ed selected ranks: Top 50 (9 E. Asian universities only; none from S. Asia); **Top 200 (only 2 S. Asian universities)**

Asian university	Country	2009 world rank	2008 world rank
U Tokyo*	Japan	22	19
U Hong Kong	Hong Kong SAR	24	26
U Kyoto	Japan	25	25
National U Singapore	Singapore	30	30
HK U Science & Tech	Hong Kong SAR	35	39
Osaka U	Japan	43	44
Chinese U of HK*	Hong Kong SAR	46	42
Seoul National U	Republic Korea	47	50
Tsinghua U	China	49	56
<b>IIT Mumbai</b>	<b>India</b>	<b>163</b>	<b>174</b>
<b>IIT Delhi*</b>	<b>India</b>	<b>181</b>	<b>154</b>

\* = declined since 2008

Only two from all of South Asia.  
None from Sri Lanka

Universities in name only?



Today what **skill advantages** do we  
have?

Even within Asia?

# AT Kearney service location rankings, 2009, point to education as the bottleneck

Rank	Country	Financial Attractiveness	People skills & Availability	Business Environment	Total Score
1	India	3.13	2.48	1.30	6.91
7	Philippines	3.19	1.17	1.24	5.60
16	Sri Lanka	3.13	0.95	1.17	5.25



Confirmed by UN system rankings (& we're sliding: dropped six places since 2002)

Country	Access Rank 2007	Access Rank 2002	Use Rank 2007	Use Rank 2002	Skills Rank 2007	Skills Rank 2002
Maldives	55	68	82	73	97	100
Sri Lanka	99	104	116	118	91	85
Bhutan	113	117	120	126	124	120
India	129	124	107	153	118	118
Pakistan	118	135	98	92	144	144
B'desh	127	127	152	148	140	130
Nepal	137	120	140	136	132	133

ITU ICT Development Index, sub-components

# Molding the bright future from the dismal today

## Imagine

- *Look ahead, not in rearview mirror like protectionists and xenophobes*
- *Look inside, not at “wrong” actions of others, but at what we can do proactively*

Build

## Molding the bright future . . .

- **Attract** server farms to South Asia using cheap and plentiful electricity on the southern slopes of the Himalayas
- **Build** “Silk Route 2.0” with terrestrial and undersea fiber networks
- **Make** South Asia an economically integrated services powerhouse
- **Restore** South Asia to its rightful place as a knowledge production and replication center as in the days of Nalanda, Taxila, Abhayagiri and Vikramashila

What will the 21<sup>st</sup> century bring?

What we imagine . . .  
. . . and what we build

nothing less, nothing more