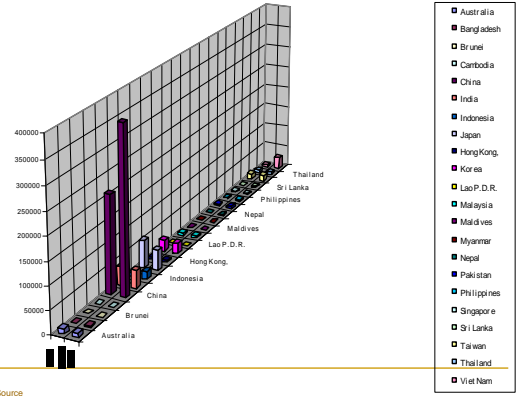


Knowledge Engineering

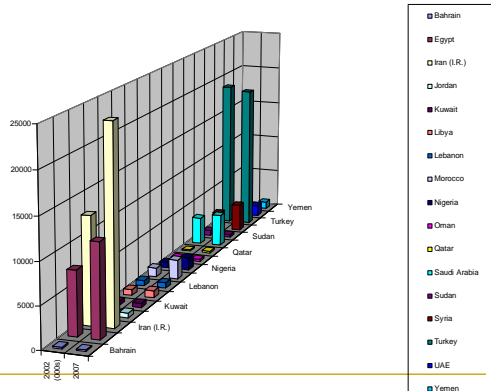
The Following Six Slides Represent Data From A Selection Of Countries about Fixed Telephone Lines X 000's and Per 100 People in The Regions of Europe + USA, Middle East + Nth.Africa + Asia Pacific.

Fixed Telephone Lines X 000's – Asia Pacific



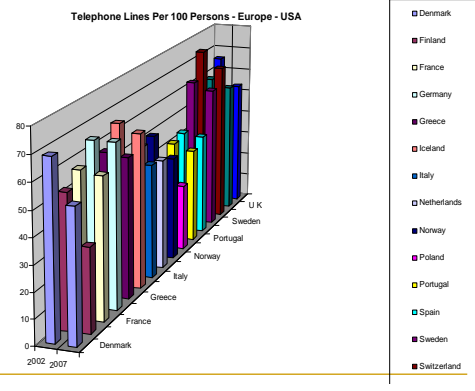
Source

Fixed Telephone Lines X 000's – Middle East + Nth.Africa



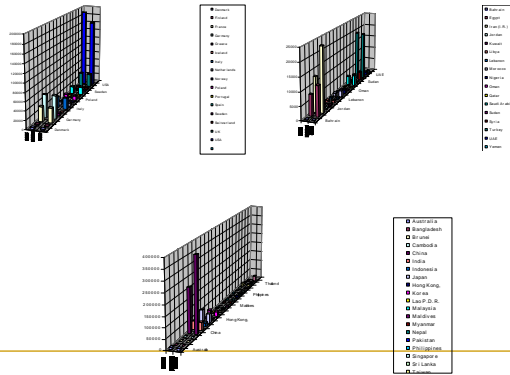
Source

Fixed telephone Lines X 000's – Europe + USA

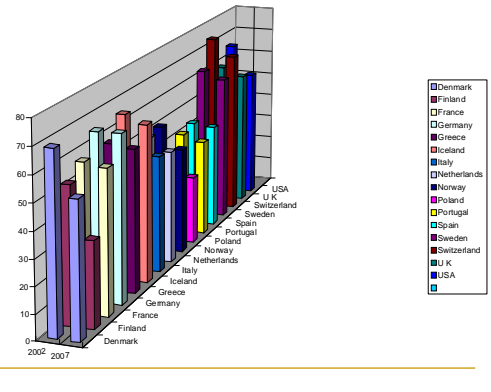


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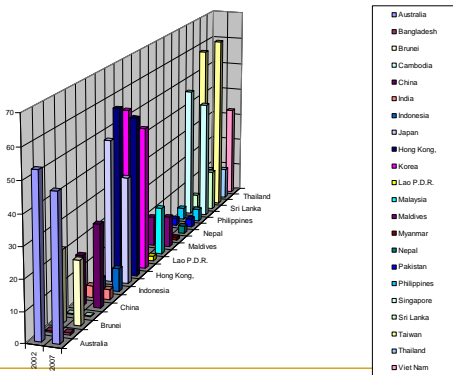
Fixed Telephone Lines X 000's



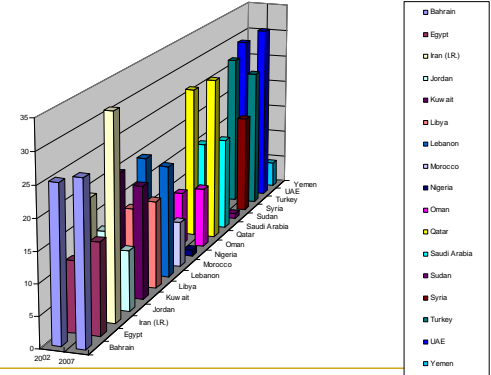
Fixed Telephone Lines Per 100 People – Europe + USA



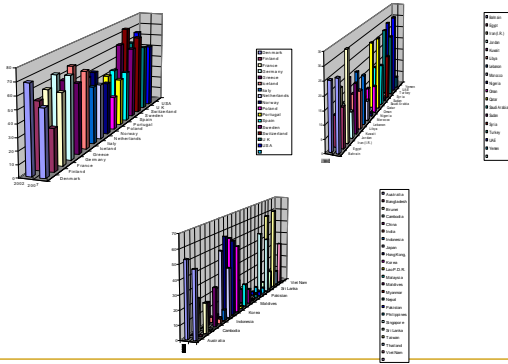
Fixed Telephone Lines Per 100 People – Asia Pacific



Fixed Telephone Lines Per 100 People – Middle East + Nth.Africa



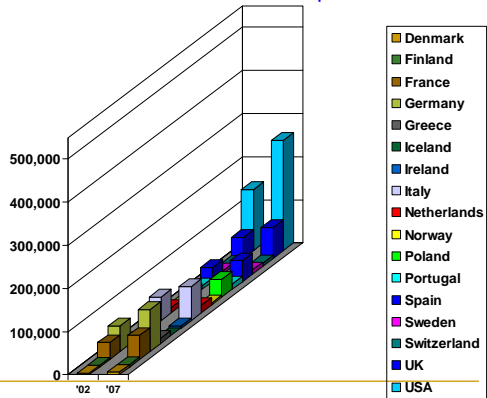
Fixed Telephone Lines Per 100 people



Knowledge Engineering

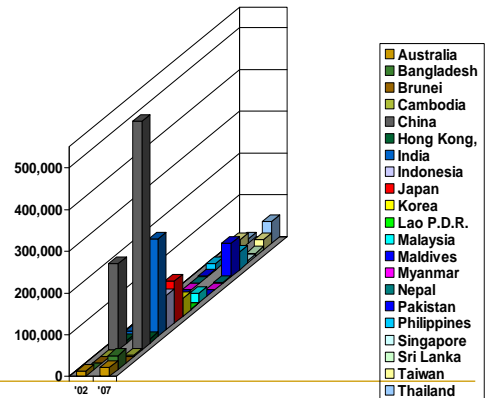
The Following Six Slides Represent Data From A Selection of Countries, About Mobile Telephone Line Subscribers In The Regions Of Europe and USA, Middle East + Nth. Africa and Asia Pacific.

Mobile Cellular Subscribers X 000's – Europe - USA

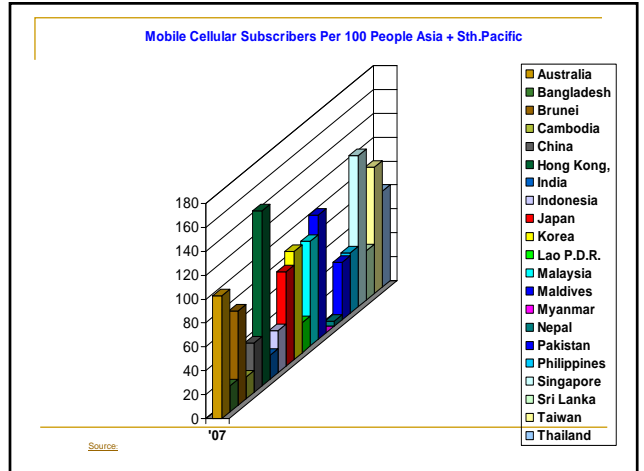
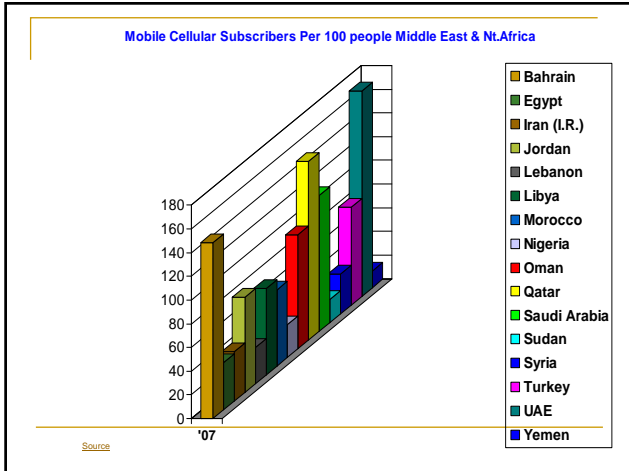
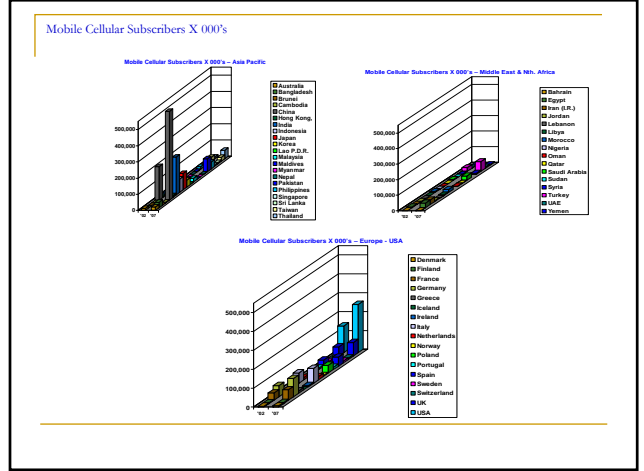
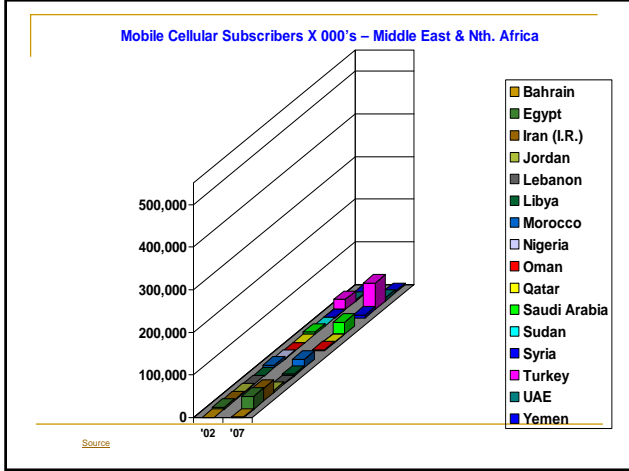


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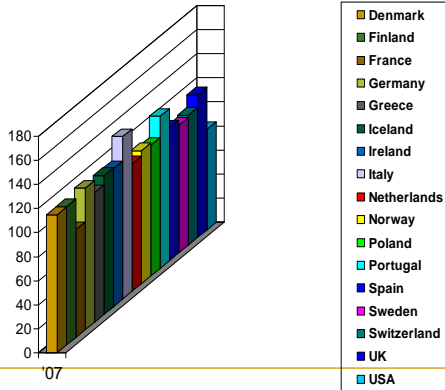
Mobile Cellular Subscribers X 000's – Asia Pacific



Source:

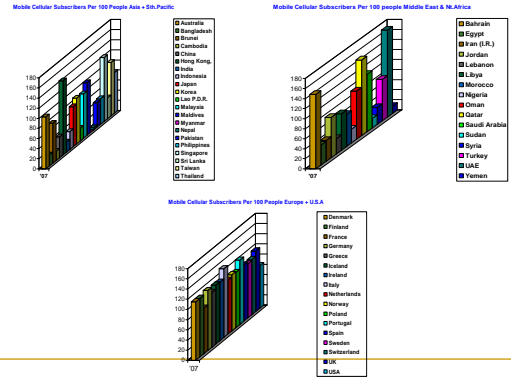


Mobile Cellular Subscribers Per 100 People Europe + U.S.A



Source:

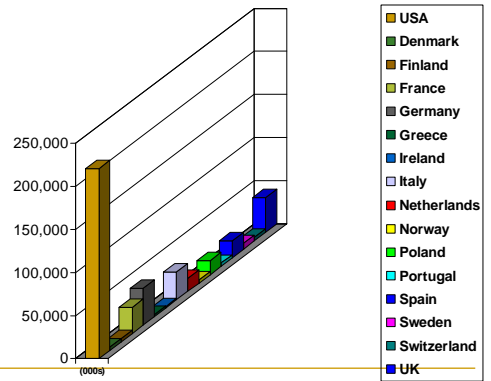
Mobile Cellular Subscribers Per 100 People



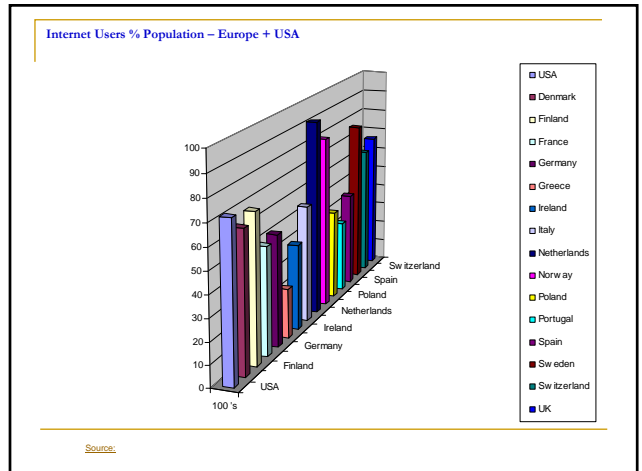
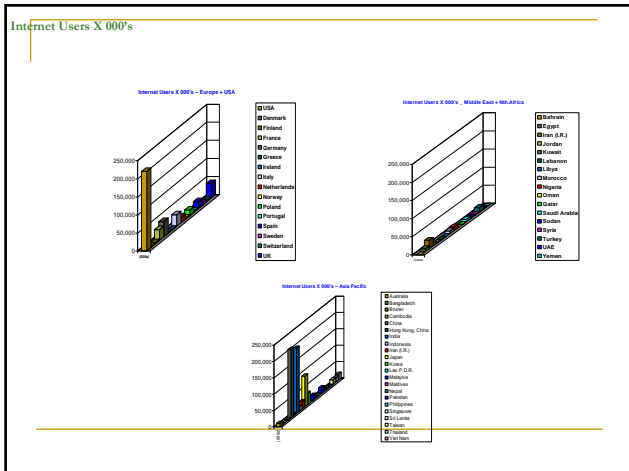
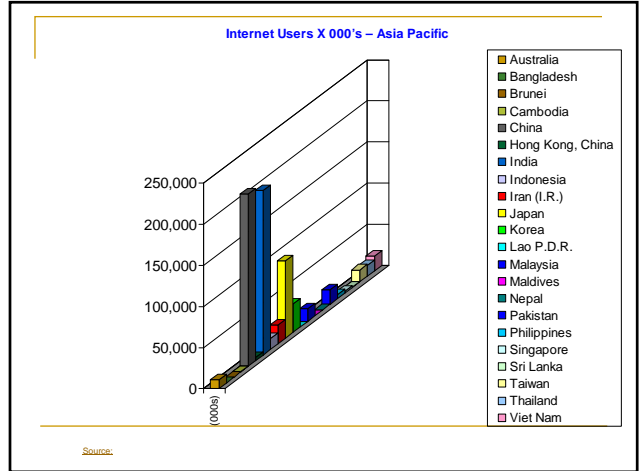
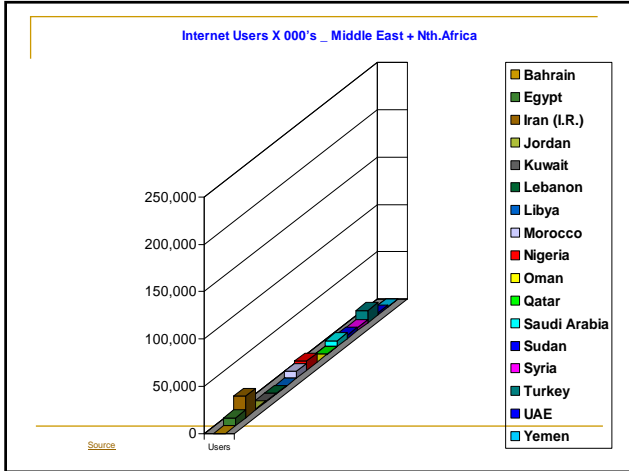
Knowledge Engineering

- The Following Six Slides Represent Data From A Selection of Countries, About Internet Users In The Regions Of Asia Pacific, Middle East + Nth. Africa, Europe and USA.

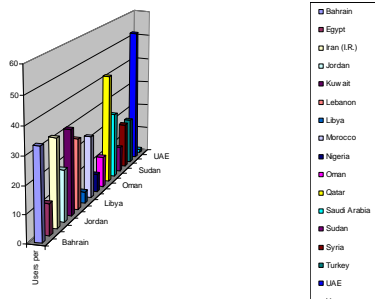
Internet Users X 000's - Europe + USA



Source:

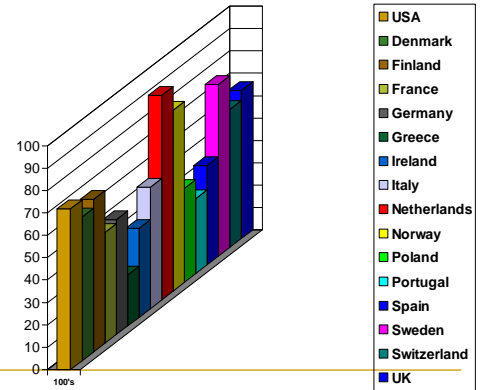


Internet Users % Population – Middle East + Nth.Africa



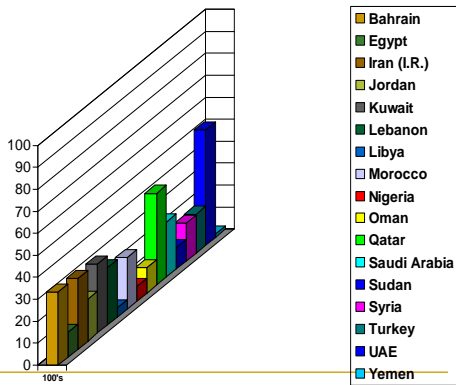
Source

Internet Users % Population – Europe + USA



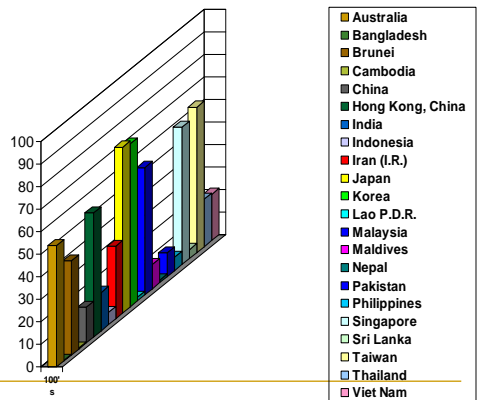
Source

Internet Users % Population – Middle East + Nth.Africa



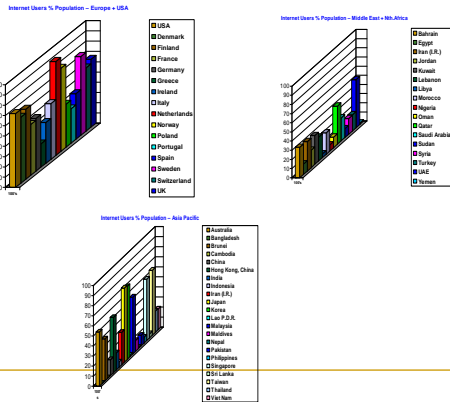
Source

Internet Users % Population – Asia Pacific



Source

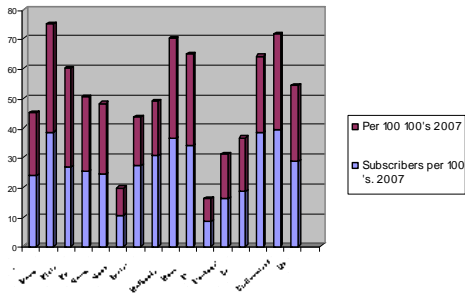
Internet Users As a % of Population



Knowledge Engineering

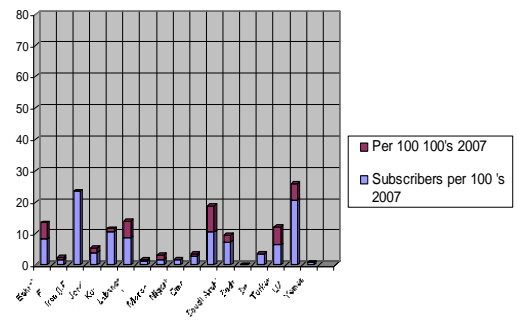
The Following Six Slides represent a Comparison of Internet and Broadband Subscribers in The Regions Of Asia Pacific, Middle East + Nth. Africa, Europe and USA

Europe + USA Internet and Broadband Subscribers as % of Population

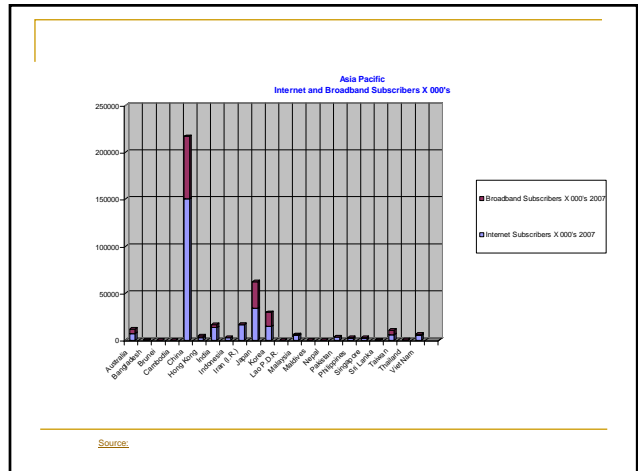
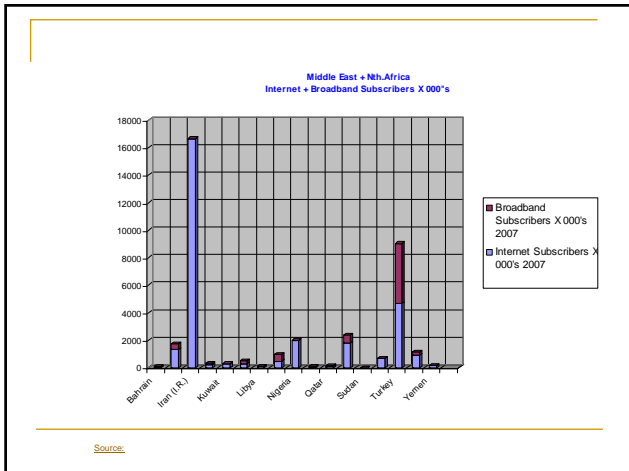
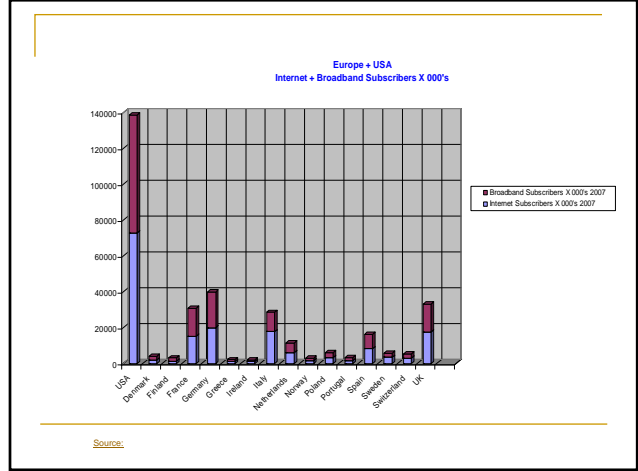
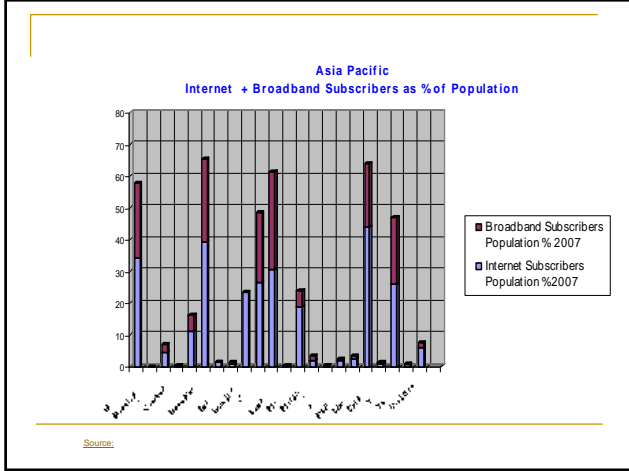


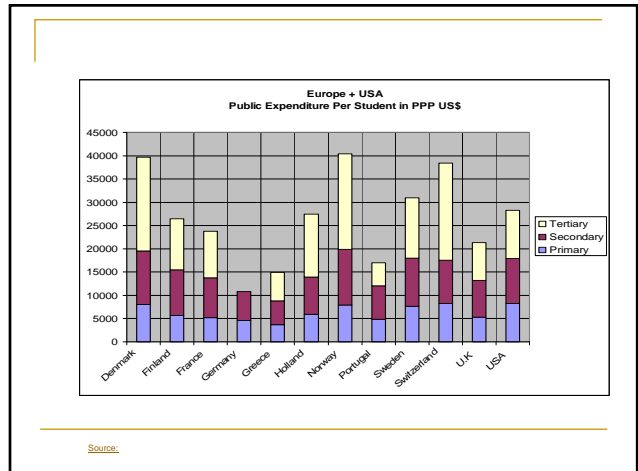
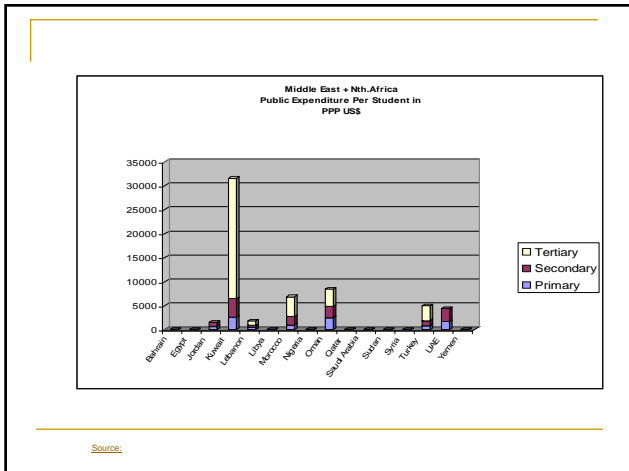
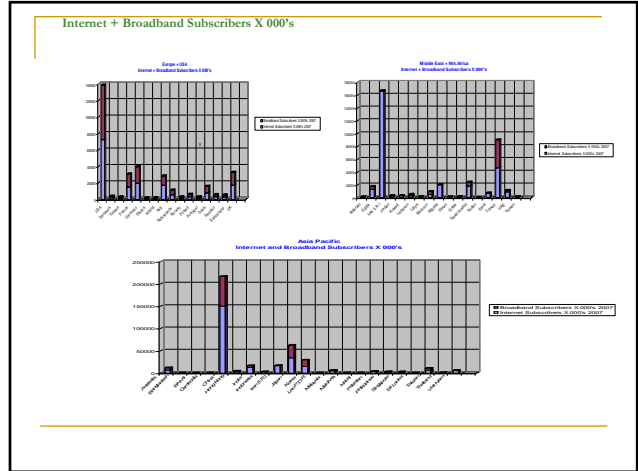
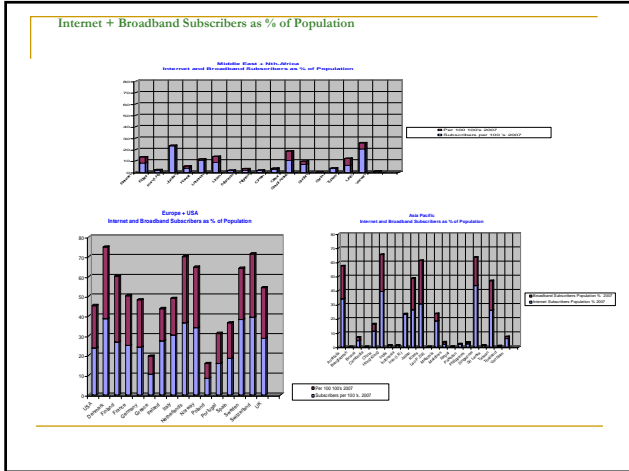
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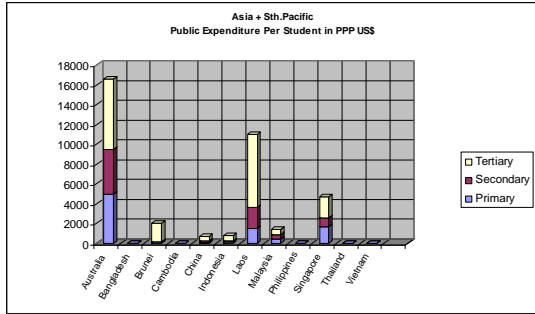
Middle East + Nth. Africa Internet and Broadband Subscribers as % of Population



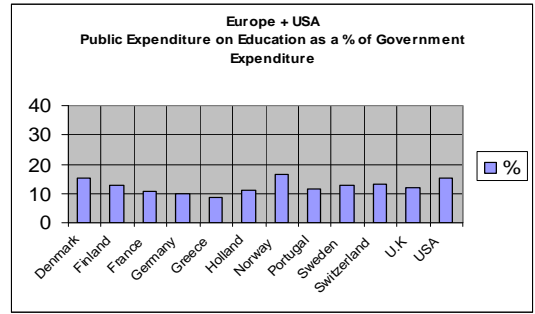
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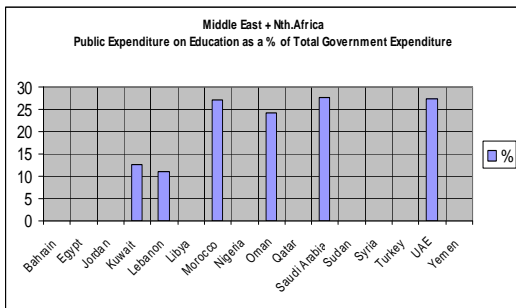




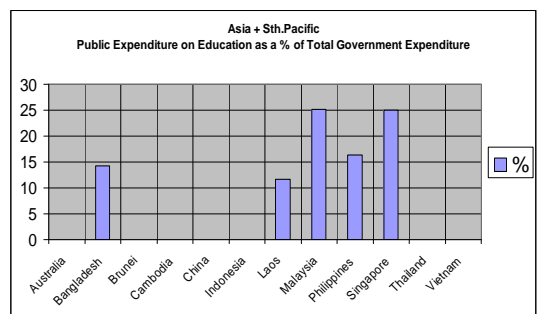
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Percentages of Technical/Vocational Enrolment in secondary by GDP per capita (logarithm)

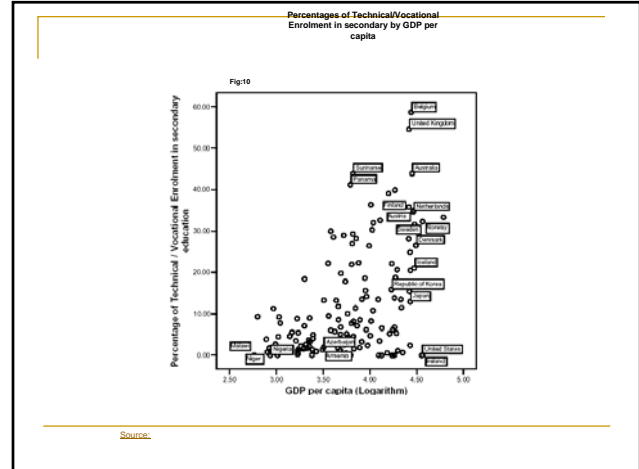
Figure 10 shows that the greater a country's Gross Domestic Product per capita, the greater its secondary

Percentage of Technical/Vocational Enrolment.

For instance, the three countries with the highest PTVEs - Australia, Belgium and the United Kingdom - also have very high GDP per capita; meanwhile, Malawi, Nigeria and Niger have low values for both GDP per capita and PTVEs.

Some neighbouring and/or relatively homogeneous countries tend to cluster, e.g. all five Nordic countries have high income levels and PTVE between 20% and 35%; Japan and the Republic of Korea have similarly high income and PTVE around 15%; and Armenia and Azerbaijan have lower income and very low PTVE.

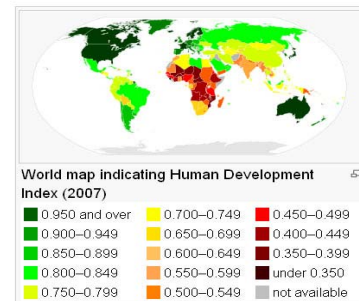
There are exceptions, however. The United States and Ireland do not have secondary vocational education despite their high GDP per capita. In contrast, Suriname and Panama are middle-income countries with very high PTVE.

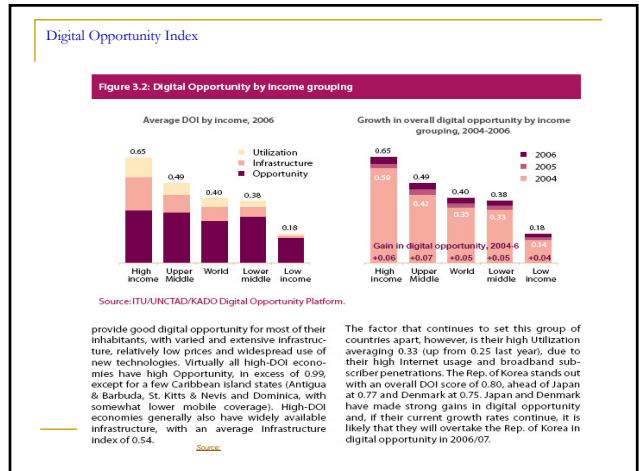
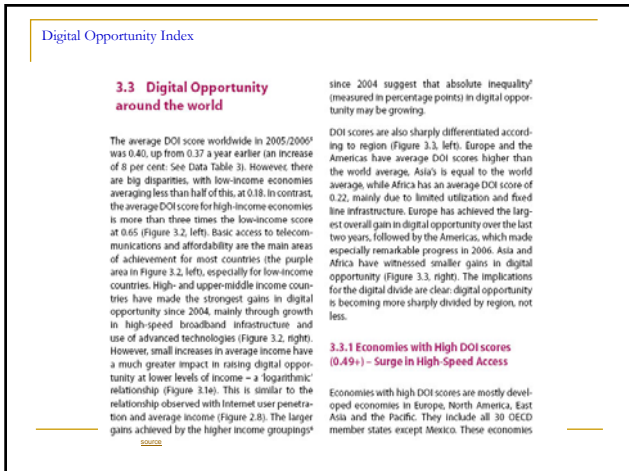
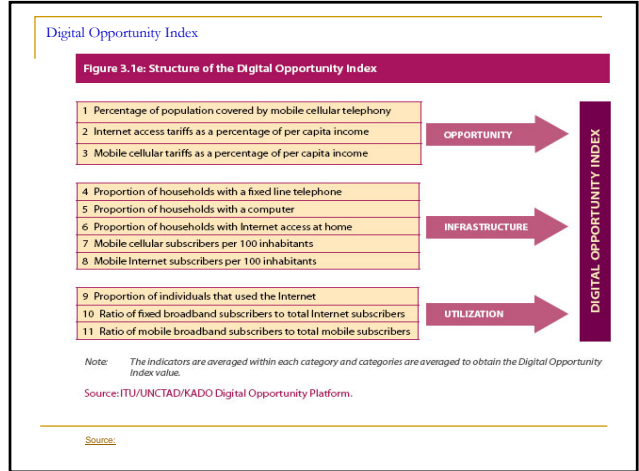
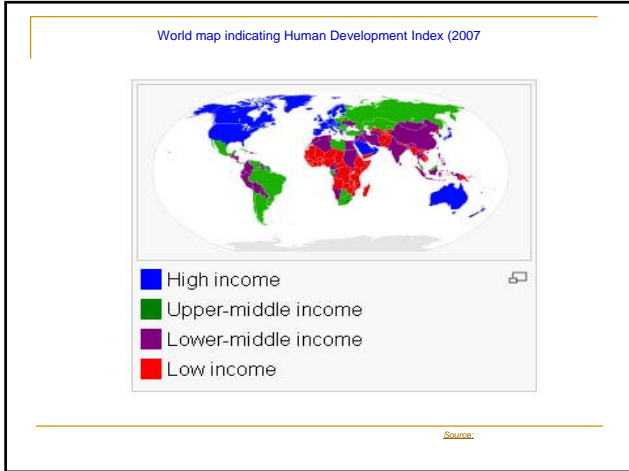


I.T. and World Development

- The **Human Development Index (HDI)** is an index combining normalized measures of life expectancy, literacy, educational attainment, and GDP per capita for countries worldwide. It is claimed as a standard means of measuring human development — a concept that, according to the United Nations Development Program (UNDP), refers to the process of widening the options for persons, giving them greater opportunities for education, health care, income, employment, etc. The basic use of HDI is to rank countries by level of "human development", which usually also implies to determine whether a country is a developed, developing, or underdeveloped country.

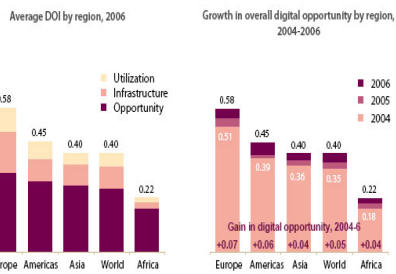
Human Development Index





Digital Opportunity Index

Figure 3.3: Digital Opportunity worldwide



Source: ITU/UNCTAD/KADO Digital Opportunity Platform.

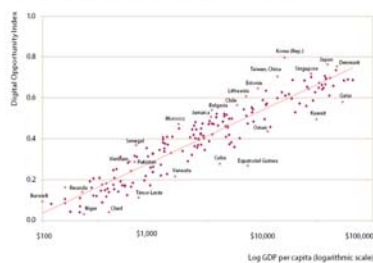
The Digital Divide

- The Digital Divide is real and growing in many cases
- The ability to move into the Digital Age will effect each country's future growth opportunities and impact greatly it's industries and citizens.
- Many countries are not well placed at this time and need a Digital Rescue package in order to catch up and compete.
- An effective national IT policy must be multi-sectored and target changes and give incentives

Digital Opportunity Index

Figure 3.16: How Digital Opportunity relates to national economic performance

The chart shows the relationship between DOI and national wealth, as indicated by GDP per capita, using a logarithmic scale.



Note: Countries above the line have a higher DOI score than would be predicted by their GDP per capita. Countries below the line have a lower DOI score than would be predicted by their GDP per capita.

Source: ITU/UNCTAD/KADO Digital Opportunity Platform.

Source:

The Knowledge Economy and Economic Performance

Economic development and knowledge are closely related (figure 4). In fact, the correlation between the accumulation of knowledge, as measured by the KEI, and levels of economic development

- is around 87 percent. Countries with higher KEI values tend to have higher levels of economic development, and vice versa.
- This positive correlation does not establish a causal relationship between the KEI and economic development.
- In fact, it is very plausible that high-income countries, because they are more affluent, are able to afford more investments in knowledge. The correlation, by itself, does not permit us to predict with any degree of certainty that building up certain forms of knowledge in a poor country will be sure to produce economic growth anytime soon.

Technology and poverty reduction

To a significant degree, technological progress is what makes the difference between fast-growing developing economies and slow-growing ones. In the graph below, the main difference between regions where GDP per capita has been growing quickly since the early 1990s (East Asia, South Asia, and developing countries in Europe) and those where growth has been weaker (Latin America, the Middle East, and Africa) has been the rate at which technology has progressed.

Rapid GDP per capita growth translates into rising incomes. In this way, technological progress has helped reduce the share of people living in absolute poverty in developing countries from 29 percent in 1990 to 18 percent in 2004.

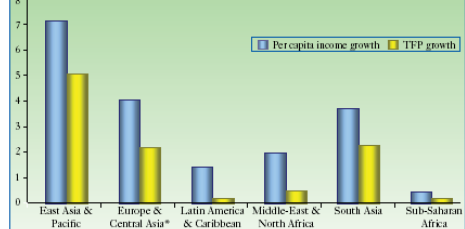
Measuring technological progress

A common measure of technological progress (the one used in this graph) is growth in total factor productivity (TFP). This is the relative efficiency with which an economy produces goods and services given a certain quantity of labor and capital.

TFP is an indirect measure because it attributes to technology all income growth that cannot be explained by investment and increases in labor supply. It is commonly used because measuring technology directly is difficult. Unlike pencils and pens, technology cannot be easily counted in physical terms.

Technological progress, income growth and poverty reduction

Average annual per capita income and total factor productivity growth, 1990-2005



* Data for Europe & Central Asia cover period 2003/1995
 Source: World Bank, Fomenko, Sandra, 2006, "The Long-Term Growth Prospects of the World Economy: Horizon 2050," Working Paper 2006-16, Centre d'Etudes Prospectives et d'Informations Internationales.