

**Regional Workshop and Frequency Coordination  
meeting on the Transition to Digital Terrestrial  
Television and the Digital Dividend  
21-26 May 2012  
Bridgetown, Barbados**

# **World-wide Digital Television Migration Current Status**

Pham Nhu Hai  
Radiocommunication Bureau



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## **We are in the middle of the fifth technical revolution!**

The Age of Information and  
Telecommunications

1971



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# The world has experienced five major technical- economic cycles

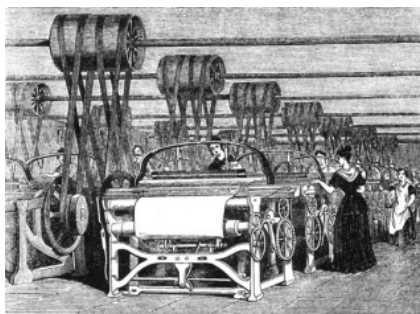
Technological Revolutions and  
Financial Capital  
Prof Carlos Perez



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## 1771



The First  
Industrial  
Revolution in  
Britain, based  
on  
mechanization  
of the cotton  
industry



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**1829**



## The Age of Steam and Railways



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**1875**



## The Age of Steel and Electricity



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## 1908



### The Age of Oil, the Automobile, and Mass Production



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## One day in November 1971

- Bob Noyce and Gordon Moore launched Intel's first microprocessor
- the precursor of the computer on a chip
- It was the big-bang of a new universe, that of all-pervasive computing and digital telecommunications.



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**1971**



## **The Age of Information and Telecommunications**



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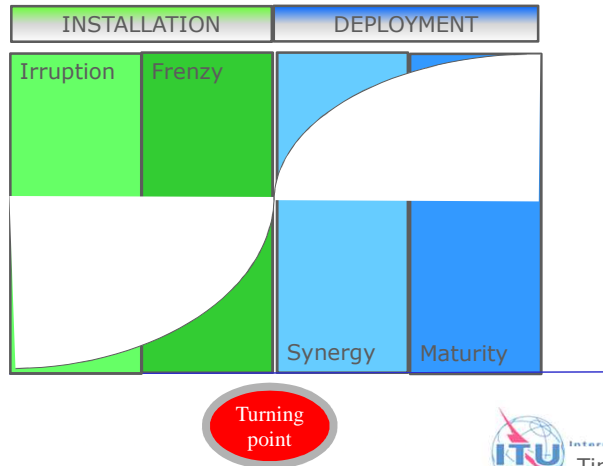
Each technological revolution has led to the massive replacement of one set of technologies by another, either by outright substitution or through the modernization of existing equipment, processes and ways of operation.

Each involved profound changes in people, organizations and skills in a sort of habit breaking hurricane.



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# The four phases



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# 12



1928 Baird Model "C"

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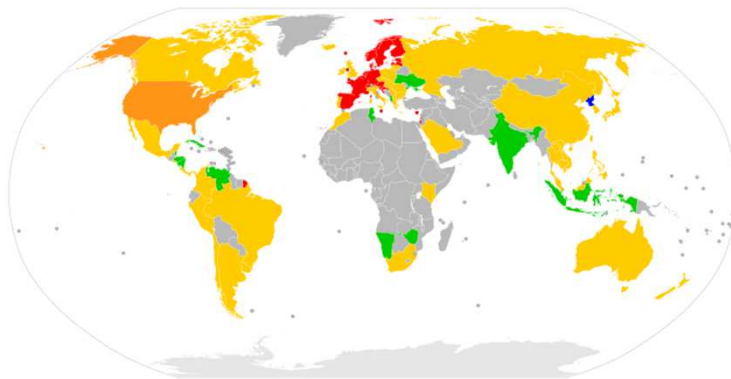
**5 000 000 000**



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## **Digital Transition around the world**



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## Europe – Status Report

- European Commission recommended DSO to be completed by **1 January 2012**
  - EU REC 2009/848/EC Oct 2009



## Completed - Europe

- Netherlands – 11 Dec 2006
  - 90% cable subscribers
- 2007
  - Finland – Many viewers refused to pay TV licence fee due to high price of DTV.
  - Sweden
  - Switzerland





## Completed (2) - Europe

- 2008
  - Germany - Cable and satellite available
- 2009
  - Denmark, Norway
- 2010
  - Belgium, Spain, Latvia, Estonia, Croatia, Slovenia, Luxembourg



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## Completed (3) - Europe

- 2011
  - Israel, Wales, Monaco, Austria, Scotland, Cyprus, Malta
  - France including overseas departments and territories.



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## In progress – Europe

- 2012 ASO
  - Azerbaijan, Bulgaria, Czech Republic, Ireland, Lithuania, Portugal, Slovakia, UK
- 2013
  - Greece (\$), Hungary, Iceland, Italy (2006!), Poland, Serbia
- 2014 - Turkey
- 2015 – Russia (30% popl), Macedonia, Romania

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## Not Yet Started- Europe

- Albania – 2015
  - unlicensed DTT for many years
- Ukraine – 2015
- Other former Soviet Union countries

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## North America

- United States
  - High power – Jun 2009
  - TV 52-69 – Dec 2011
  - Low power – Sep 2015
- Canada
  - Mandatory markets – Aug 2011, some CBC delayed to Aug 2012
  - Low power outside MM continue analogue operations



## North America (2)

- Mexico
  - 2015 (2021) with transition 2011
  - DTT to start in cities in descending order of size



## In Progress - South America

- Argentina – Sep 2019
  - DTT started in Buenos Aires 2008.
- Brazil – Jun 2016
  - DTT started in Sao Paulo 2007
  - Brasilia, Rio, Belo Horizonte 2008
  - 23 state capitals 2009
  - Remaining cities 2013
- Peru – Jul 2020
  - DTT started in Lima 2010

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## Not Started – South America

- Chile, Colombia – 2017
- Venezuela – 2020 (?)
- ..... Others

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## Not yet Started – Central America

- Cuba – 2014
- Costa Rica – 2018
- El Salvador – 2019
- Caribbean countries



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## ARAB States

- Reception mostly via Satellites
- Not yet started
- Egypt
  - Cairo – 20 millions population, NOT ONE roof top antenna!
- UAE
  - “Consider” just to have one layer for emergency cases!



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## Africa

- WRC-12 – The African Conference
- Future is mobile broadband
  - 698-862 MHz for mobile
- 470 – 694 MHz for Broadcasting
  - 4 layers minimum
- Frequency Re-planning



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## Kenya

- September 2009 - First DTT multiplex operated by the public service broadcaster Kenya Broadcasting Corporation (KBC) in its capital Nairobi.
- 2010 World Cup - DTT in Webuye, Nyeri, Mombasa, Kisumu, Nakuru, Eldoret, Meru, Kisii and Malindi.



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## Kenya (2)

- Analogue switch-off to be completed by 2012.
- The government will provide funding of Sh152 million (€1.3 million) for the digital switchover process.
- The broadcast industry is calling on the government to subsidize DTT receivers.



## Kenya (3)

- Signet Ltd, a newly formed subsidiary of KBC, will distribute the DTT signal.
- The DVB-T standard in combination with MPEG-4 AVC compression technology. In a first phase, standard-definition television services will be available.



## South Africa

- Analogue switch-off to December 2013. Initially, was to be completed by November 2011.
- Adopt the DVB-T2 standard for its DTT platform. This follows the decision taken by the members of the Southern African Development Community (SADC).
- To finalize STB specifications (again).

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## South Africa (2)

- 90% population digital television coverage
- 10% population in the remote areas
  - Continue receiving analogue coverage
  - Satellite
- Gov set up Universal Service and Access Fund
  - 6% population will receive subsidy for STB

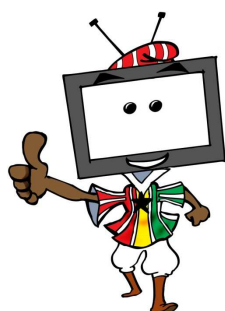
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## It's Digitime - Ghana



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## Ghana Time Table

NDBMTC Final Report to Govt	13 <sup>th</sup> Jan 2010	30 <sup>th</sup> Aug 2010
Development of Legal Framework (Amendment of Electronic Communications Act)	Sept 2010	December 2010
Public Awareness Campaign	September 2010	December 2014
Establishment of National Digital Migration Implementation Body	January 2011	

## Ghana Time Table (2)

Licences for Digital TV	January 2011	March 2011
Nationwide Roll-out of Digital TV (Simulcast Period)	April 2011	2013
Coverage of all Regional Capitals & environs	By December 2012	
Phased Analogue Switch-off	To be determined according to locations and conditions	
Completion of Switchover	2014	
Appraisal Report of Switchover Process	6 months after completion of switchover	

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## CONCLUSIONS

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## Information big bang!

- Today, **every year** there is more information put on the web than everything that have been said and written in the history of mankind
  - Dr Ian Goldin, Director of the James Martin 21<sup>st</sup> century school, Oxford, UK
- **2 days** in 2012
- **4 minutes** in 2016!



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## Digital migration is NOT just about Digital Television!



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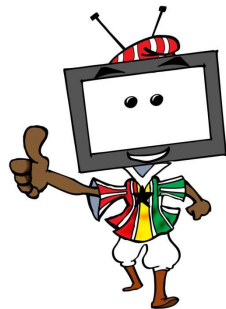
# The Digital Revolution

touches all aspects of  
radiocommunication and  
telecommunication services



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Ghana knows it!

## IT'S DIGITIME!



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**Thank you for your attention!**



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**Why no one came to the rescue?**

**TOP SECRET!**

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