

**PADM7007**

**ICT Market Structures  
&  
Regulatory Reform**

**A core course in the degree of  
Master of Management  
in the field of ICT Policy & Regulation**

**Convenor: Dr. Abi Jagun**

**14 – 17 September 2010**



## 1 Content Overview

The course reviews the impact of technological and policy changes on the development of the telecommunications markets and the impact of the market structure on the regulatory frameworks and institutions. It examines the nature and economics of network infrastructures and the shift from natural monopoly public utility approaches to telecommunications to more market driven policies. It considers the impact of new market and regulatory approaches on the structure and organisation of the industry and the progress these reforms are meant to have induced in the industry and society.

The broad consensus on the improved efficiency of privatisation and liberalisation are examined in the face of case study evidence and what conditions in liberalising markets in developing countries have to be met to realise the public interest benefits of reforms. Experiences of different regions and countries will also be reviewed.

## 2 Session Summary

Date	Time	Topic	Presenter
Tuesday 14 Sept.	09:00 – 12:30	Economic Characteristics of Network Industries, their structure and significance	Richard Majoor
	13:30 – 17:00	Economic Characteristics of Network Industries, their structure and significance	
Wednesday 15 Sept.	09:00 – 12:30	Relationships between policy, market design and regulation	Abi Jagun
	13:30 – 17:00	Relationships between policy, market design and regulation: Case of South Africa	Charley Lewis
Thursday 16 Sept.	09:00 – 12:30	Regional Policies, Regulations and market structures: Case of Europe	Charley Lewis
	13:30 – 17:00	Regional Policies, Regulations and market structures: West Africa	Abi Jagun
Friday 17 Sept.	09:00 – 12:30	Changing Boundaries in policies, regulation and market structures	Luci Abrahams
	13:30 – 17:00	Presentations of group assignment	Abi Jagun

### 3 Course Outcomes

On completion of this course, participants will be able to:

- Explain network industries, their characteristics and market structures
- Analyse through case studies and classroom based exploration the relationship of policy and market structures and the impact they have on the nature of regulation and the fulfilment of national objectives and sector performance
- Describe regionalism in Europe and Africa and its influence in policy, regulation and market structure
- Articulate the changing boundaries in policies, market structures and regulation as a result of technological advancement particularly convergence, broadband and the Next Generation Networks

### 4 Core Readings

The following core reading is recommended for the course. It is available in electronic format via <http://ignite.wits.ac.za>:

- Bergman L, Doyle C, Gual J, Hlutkrantz L, Neven D, Roller, L H, Waverman L (1998) *Europe's Network Industries: Conflicting priorities*, Telecommunications, Centre for Economic Policy Research, London.

### 5 Required Readings

One or more required readings will be provided for each session. These are printed out and included in your course pack. You are expected to complete those readings required for each session **in advance** as the lecture will assume familiarity with their content.

Lecturers / facilitators who use teaching aids or provide additional material, will distribute these notes to you as they become available. These notes should be added to your course file and included as part of your course materials.

### 6 Additional Readings

An electronic library of course notes and links to additional reference material relevant to this course is made available via the Wits Ignite web site at <http://ignite.wits.ac.za>. You will be given a logon ID and password to allow you to access this material, which is loaded under the folder 'PADM5078 Universality & Quality of Service Regulation'. You are strongly encouraged to make extensive use of resources and features of this course web site.

You may also be required to contribute to online discussions or to complete assignments and other forms of assessment via this web site.

Note that many of these readings are presented in Acrobat Reader format, which will require you to have Acrobat Reader installed on your computer.

### 7 Preparation Requirements

Your preparation work - mainly reading - should be done individually before you come on the course. Questions to guide your reading have been provided for this reason. **Please note**

**that there are group tasks to prepare for specific sessions.** These will assist you to work through the conceptual and theoretical understandings in each of the readings and begin to apply these to cases and issues.

We assume that for every 1 hour that you spend in the classroom, 24 in total, you will need to spend approximately 4 hours in preparation. This includes reading, drafting assignments and examinations. On average, each course comprises 120 notion hours of 12 credits.

## 8 Syndicates and Group Learning

An interactive and intensive learning methodology is utilised, which involves a combination of lectures, case studies, group and individual projects. Given that many participants are active in shaping the telecommunications sector, the P&DM endorses the “syndicate method” of teaching, which requires that some of the learning will be done in groups. This approach is designed to enable course participants to contribute to the course, bringing in their own practical experience, knowledge and expertise together with those of their peers to create a rich learning environment.

Each participant will be assigned to a syndicate group. Syndicates and group work are a vital component of the learning process and attendance at all syndicate meetings is required and compulsory.

Syndicate meetings will be organised by the group members at a time and place suitable to them in accordance with the programme’s schedule. Although the P&DM will make syndicate meeting rooms available, these meetings need not be held on campus. Syndicate meetings and interactions may also take place virtually, through the course WebCT site and via the mailing lists which will be made available for this purpose.

Problems within syndicate groups are to be reported timeously to the Academic Convenor of this course, so that steps may be taken to resolve them. Syndicates will only be able to change their syndicate group composition under exceptional circumstances, and at the sole discretion of the Academic Convenor.

## 9 Course Assessment

This course has been designed as a reading intensive course. A key focus then is to build your academic reading and analytical skills while dealing with the course content. There are two components to the assessment for this course: a group assignment, which is done in syndicate groups during the week, and a written examination, which is done individually.

The group assignment will be distributed and completed during the course of the week, and will count 15% towards your final mark for the course. Its due date for submission is 17 September 2010.

The individual exam-equivalent assignment will count 85% towards your final mark for the course. Your lecturers will discuss its requirements during the course of the week, and it will be distributed at the end of the course. It is due for submission **Monday 1 November 2010**.

You will be required to submit the individual exam-equivalent assignment online via the SafeAssign feature of Ignite (<http://ignite.wits.ac.za>). Be aware that this feature performs a check on your assignment for plagiarism and copying.

<b>Sessions 1 and 2: Economic characteristics of network industries, their structure and significance</b>	
<b>Presenter</b>	Richard Majoor
<b>Outcomes</b>	<p>Participants will be able to :</p> <ul style="list-style-type: none"> <li>• Analyze the nature of network industries</li> <li>• Describe the concepts of vertical and horizontal market structure and how they emerge</li> <li>• Explain the economic characteristics of network industries e.g. network externalities</li> <li>• Discuss natural monopoly/public utility, oligopoly</li> </ul>
<b>Questions to guide you for pre-reading</b>	<ul style="list-style-type: none"> <li>• What are network industries?</li> <li>• What distinguishes network industries from other industries?</li> <li>• What are the benefits of facilities based competition as opposed to service-based competition?</li> <li>• What is the desirable degree of vertical and horizontal integration in the telecommunications industry?</li> <li>• Do telecommunications network remain natural monopolies and should they remain public monopolies?</li> <li>• Give examples of alternative market structures</li> <li>• Which types of vertical and horizontal unbundling can be used to change the market structure in a network industry?</li> <li>• Are the regulatory responses to a private monopoly different from a public owned monopoly?</li> <li>• Give examples of market failures typical of network industries?</li> </ul>
<b>Core Readings (Must reads)</b>	<ul style="list-style-type: none"> <li>• Bergman L, Doyle C, Gual J, Hlutkrantz L, Neven D, Roller, L H, Waverman L (1998) <i>Europe's Network Industries: Conflicting priorities</i>, Chapters 1, 2 and 3, Centre for Economic Policy Research, London</li> <li>• Economides, N (2006) 'Public Policy in Network Industries', Law and Economics Research Paper No 06-49, New York University, New York, available online at <a href="http://www.stern.nyu.edu/networks/Economides_Public_Policy_In_Network_Industries.pdf">http://www.stern.nyu.edu/networks/Economides_Public_Policy_In_Network_Industries.pdf</a></li> </ul>
<b>Additional References</b>	<ul style="list-style-type: none"> <li>• Economides, N (1996) 'The Economics of Networks', <i>International Journal of Industrial Organization</i>, No 14, Elsevier Science, Amsterdam</li> <li>• E. Teljeur, Gillwald, A, Steyn, G &amp; Storer, G (2003) 'Regulatory Frameworks: Impact and Efficacy: Volume 2 – Detailed Sectoral Reports', Development Policy Research Unit, UCT Available online at <a href="http://www.tips.org.za/files/725.pdf">http://www.tips.org.za/files/725.pdf</a></li> <li>• Theron, N &amp; Boshoff, W (2006), 'Vertical Integration in South African Telecommunications: A Competition Analysis', <i>South African Journal of Economics</i>, Vol 74, Blackwell, London, available online at <a href="http://www.econex.co.za/index.php?option=com_docman&amp;task=doc">http://www.econex.co.za/index.php?option=com_docman&amp;task=doc</a></li> </ul>


	<p><a href="#">download&amp;gid=5&amp;Itemid=60</a></p> <ul style="list-style-type: none"> <li>Williamson, B &amp; Mumssen, Y (2000) 'Economic Regulation of Network Industries', Treasury Working Paper 00/05, Government of New Zealand, Wellington, available online at <a href="http://www.treasury.govt.nz/publications/research-policy/wp/2000/00-05/twp00-05.pdf">http://www.treasury.govt.nz/publications/research-policy/wp/2000/00-05/twp00-05.pdf</a></li> </ul>
<p>Activity</p>	<p>This will be an interactive session where students are required to participate in class discussions actively.</p>
<p>About your Lecturer</p>	<p>Richard Majoor is an engineer by profession, with a Doctorate in Communications Engineering from the University of Natal. He joined Telkom in 2002 in the technical strategy divisions, and moved to Telkom's Regulatory Affairs &amp; Public Policy division in 2007. Richard current holds the post of Executive of Technical Regulations within Regulatory Affairs. He was part of the team for Telkom's response to the various leased line &amp; call termination market review processes by ICASA and headed up Telkom's response to the draft essential facilities regulations by ICASA. Richard is currently studying towards his Chartered Financial Analyst qualification.</p> 

**Group Assignment: Review of Different Network Industries**

Each group is expected take a network industry (transport, energy, postal service, telecommunications) in their own countries and analyze how that specific industry is different from other industries, its characteristics, market structure and the challenges to policy and regulation pertaining to the specific industry.

<b>Session 3: Relationships between policy, market design and regulation</b>	
<b>Presenter</b>	Abi Jagun
<b>Outcomes</b>	<p>Participants will be able to:</p> <ul style="list-style-type: none"> <li>• Describe the relationship between policy, market structures and regulation</li> <li>• Discuss the need to balance efficiency against equity; monopoly against competition; infrastructure vs. service based competition, unbundling, public vs. private ownership and sector specific vs. competition regulation in determining market design</li> <li>• Evaluate the impact of liberalisation and privatisation on market reform</li> <li>• Analyze the components of network regulation: interconnection, interoperability, access pricing and standards.</li> </ul>
<b>Questions to guide you for pre-reading</b>	<ul style="list-style-type: none"> <li>• What has driven market restructuring across the globe?</li> <li>• What is the relationship of policy, market design and regulation?</li> <li>• In what ways does privatisation or liberalisation restructure the market?</li> <li>• Is competition conducive to productivity improvements and price reductions?</li> <li>• Anticipated competition or actual changes in market structure that bring about the beneficial effects of liberalisation?</li> <li>• What is the relationship between market structure of network industries and their regulation?</li> <li>• Explain the dynamic between competition and economic regulation and how this impacts on market development?</li> </ul>
<b>Core Readings (must reads)</b>	<ul style="list-style-type: none"> <li>• Boylaud O and Nicoletti, G (2000) Regulation, Market Structure and Performance in Telecommunications, OECD Economic Studies. Available online at <a href="http://papers.ssrn.com/sol3/papers.cfm?abstract_id=238203">http://papers.ssrn.com/sol3/papers.cfm?abstract_id=238203</a></li> <li>• Bergman L, Doyle C, Gual J, Hlutkrantz L, Neven D, Roller, L H, Waverman L (1998) Europe's Network Industries: Conflicting priorities, Telecommunications, Centre for Economic Policy Research, London Chapter 4.</li> </ul>

<p>Additional References</p>	<ul style="list-style-type: none"> <li>• Hellwig, M. (2008) <i>Competition Policy and Sector-Specific Regulation for Network Industries</i>. Max Planck Institute for Research on Collective Goods. Available online at <a href="http://ideas.repec.org/p/mpg/wpaper/2008_29.html">http://ideas.repec.org/p/mpg/wpaper/2008_29.html</a></li> <li>• Liangchun, Y.; Berg, S. &amp; Guo, Q. (2004), 'Market Performance of Chinese Telecommunications: New Regulatory Policies'. <i>Telecommunications Policy</i>, Vol. 28, pp. 715-732</li> <li>• Wallsten, Scott (2002) Does Sequencing Matter? Regulation and Privatization in Telecommunications Reforms, World Bank at <a href="http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.17.8258&amp;rep=rep1&amp;type=pdf">http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.17.8258&amp;rep=rep1&amp;type=pdf</a></li> </ul>
<p>Activity</p>	<p>This is an interactive session where students are expected to discuss cases of relationships between policy, market design and regulation in different countries</p>
<p>About your Lecturer</p>	<p>Abi Jagun is a part-time lecturer at the LINK Centre of the School of Public and Development Management at the University of the Witwatersrand. She is also an independent researcher and consultant specialising on telecommunications policy in sub-Saharan Africa and on the impact of ICTs on societies and markets. Until July 2009 she was a Research Fellow in the Department of Management Science at the University of Strathclyde Business School. Abi has worked with the Association for Progressive Communications, as Africa policy officer; as a lecturer in the Institute for Development Policy Management at the University of Manchester and in the Nigeria office of the international consultancy firm Accenture. She holds an MSc in Operations Research and a PhD from the University of Strathclyde, an MBA from Cardiff University, UK and a BSc Hon in Botany from the University of Lagos, Nigeria.</p> 


<b>Session 4: Relationship of policy, market design and regulation: In depth analysis of the case of South Africa</b>	
Presenter	Charley Lewis
Outcomes	<p>Participants will be able to:</p> <ul style="list-style-type: none"> <li>• Analyse the relationship between policy, market design and regulation in South Africa</li> <li>• Describe the impact of liberalisation and privatisation on market reform in south Africa</li> <li>• Analyse network regulation: interconnection, interoperability, access pricing and standards in South Africa</li> </ul>
Questions to guide you for pre-reading	<ul style="list-style-type: none"> <li>• What were the key challenges to the telecommunications market in South Africa?</li> <li>• Were policy and regulatory reforms in South Africa adequate to change the market structure?</li> <li>• What measures should put in place to alter the market structure?</li> </ul>
Core Readings (Must reads)	<ul style="list-style-type: none"> <li>• Gillwald A (2005) Good Intentions, 'Poor Outcomes: Telecommunications Reform in South Africa' <i>Telecommunications Policy</i>, 29 (7) pp. 469-491</li> <li>• Teljeur, E.; Gillwald, A.; Steyn, G. &amp; Storer, G (2003) 'Regulatory Frameworks: Impact and Efficacy: Volume 2 – Detailed Sectoral Reports', Development Policy Research Unit, UCT (<i>Section on Telecommunications only</i>) Available online at <a href="http://www.tips.org.za/files/725.pdf">http://www.tips.org.za/files/725.pdf</a></li> </ul>
Additional References	<ul style="list-style-type: none"> <li>• Hodge, J (2001) 'Promoting Competitive Outcomes in the Fixed Line Telecommunications Sector in South Africa', unpublished conference paper, TIPS 2001 Annual Forum, Muldersdrift, available online at <a href="http://www.idrc.ca/uploads/user-S/11798688171Promoting_Compertive_Outcomes_in_the_Fixed_Line_Telecommunications_Sector_in_South_Africa.pdf">http://www.idrc.ca/uploads/user-S/11798688171Promoting_Compertive_Outcomes_in_the_Fixed_Line_Telecommunications_Sector_in_South_Africa.pdf</a></li> </ul>
Activity	This is an interactive session with discussion and debate of challenges facing the South African telecommunications market
About your Lecturer	<p>Charley Lewis is a senior lecturer, researcher and consultant at the LINK Centre, School of Public and Development Management at the University of the Witwatersrand. His areas of interest include: labour, work and ICT; ICT sector policy and regulation; universal service and access; the Internet, and business process outsourcing. He has lectured and presented widely, on a number of ICT policy, regulation and development issues. He has undertaken research in a number of areas, including the Internet, call centres, e-learning and universal access and service. He holds the degree of Master of Commerce in the Management of Information Systems from the University of the Witwatersrand.</p> 

<b>Session 5: Regional market structures and regulation - European Union</b>	
<b>Presenter</b>	Charley Lewis
<b>Outcomes</b>	<p>Participants will be able to:</p> <ul style="list-style-type: none"> <li>• Describe the evolution of a competitive regulatory framework in the European Union</li> <li>• Review the EU 2002 directives and analyze their successes and failures</li> <li>• Analyze the reasons for ongoing review of the reform in Europe</li> <li>• Articulate the implication of regional governance on national policies, market structure and regulation in Europe</li> <li>• Analyze the relevance and impact of reforms in Europe on African countries</li> </ul>
<b>Content</b>	This session will analyze the experiences of regional regulation as a new institution the telecom sector and assess its implications for regulatory effectiveness and sector.
<b>Core Readings (Must reads)</b>	<ul style="list-style-type: none"> <li>• Geradin, D (2006) 'The liberalization of network industries in the European Union: where do we come from and where do we go?', Economic Council of Finland, Helsinki, available online at <a href="http://www.vnk.fi/hankkeet/talousneuvosto/tyo-kokoukset/globalisaatioselvitys-9-2006/artikkelit/Geradin_06-09-20.pdf">http://www.vnk.fi/hankkeet/talousneuvosto/tyo-kokoukset/globalisaatioselvitys-9-2006/artikkelit/Geradin_06-09-20.pdf</a></li> <li>• Buigues, P. A. (2006) 'Competition policy versus sector-specific regulation in network industries – The EU experience', 7<sup>th</sup> Session of the Intergovernmental Group of Experts on Competition Law and Policy, Geneva, 30 October - 2 November 2006, United Nations Conference on Trade and Development, Geneva, available online at <a href="http://unctad.org/sections/wcmu/docs/c2clp_ige7p14_en.pdf">http://unctad.org/sections/wcmu/docs/c2clp_ige7p14_en.pdf</a></li> </ul>
<b>Additional References</b>	<ul style="list-style-type: none"> <li>• David Coen and Chris Doyle, Liberalization of Utilities and Evolving European Regulation, Available online at <a href="http://onlinelibrary.wiley.com/doi/10.1111/1468-0319.00236/pdf">http://onlinelibrary.wiley.com/doi/10.1111/1468-0319.00236/pdf</a></li> <li>• Volker Schneider and Raymund Werle, 2006, Telecommunications Policy, in Paolo Graziano and Maarten Vink, eds. Europeanization: New Research Agendas. Basingstoke: Palgrave Macmillan. Also available online at: <a href="http://www.uni-konstanz.de/FuF/Verwiss/Schneider/ePapers/VSRW_TPCh20.pdf">www.uni-konstanz.de/FuF/Verwiss/Schneider/ePapers/VSRW_TPCh20.pdf</a></li> <li>• Directive 2002/21/EC of the European Parliament and the Council on Common Regulation on Electronic Communications Networks and Services. Available online at <a href="https://www.centri.org/main/4019-CTR/version/4/part/12/data?branch=main&amp;language=default">https://www.centri.org/main/4019-CTR/version/4/part/12/data?branch=main&amp;language=default</a></li> </ul>
<b>Activity</b>	This is an interactive session and students are expected to participate actively in the debate
<b>About your Lecturer</b>	See above.

<b>Session 6: Regional market structures and regulation – West Africa</b>	
<b>Presenter</b>	Abi Jagun
<b>Outcomes</b>	<p>Participants will be able to:</p> <ul style="list-style-type: none"> <li>• Analyze the reasons for implementation of regional regulation in Africa and comment on the evolution of regional regulatory framework in West Africa</li> <li>• Articulate the implication of regional governance on national policies, market structure and regulation in West Africa</li> <li>• Analyze the relevance and impact of reforms in key West African countries</li> </ul>
<b>Content</b>	<p>This session will analyze the experiences of regional regulation in West Africa and assess its implications for regulatory effectiveness and sector. In reading the core texts for this session students should consider the following:</p> <ul style="list-style-type: none"> <li>• Implication of regional governance on market structure</li> <li>• Regionalism and model of governance in Africa</li> </ul>
<b>Core Readings (Must reads)</b>	<ul style="list-style-type: none"> <li>• infoDev &amp; ITU (nd) Section 3.2.2. Regional Frameworks in <i>ICT Regulatory Toolkit</i>. Available online at <a href="http://www.ictregulationtoolkit.org/en/Section.1652.html">http://www.ictregulationtoolkit.org/en/Section.1652.html</a></li> <li>• Kessides, I.; Noll, R. G. &amp; Benjamin, N. (2009) 'Regionalizing Telecommunications Reform in West Africa'. World Bank Policy Research Working Paper 5126. Available online at <a href="http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1509193">http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1509193</a></li> </ul>
<b>Additional References</b>	<ul style="list-style-type: none"> <li>• Barendse, A (2006) Regulatory reform in SADC: Regional regulation as a new form of governance in the telecom industry, Regional report on SADC and TRASA</li> <li>• ECOWAS supplementary acts of telecommunications, Information and Communication technology (ICT) Sector. Available online at <a href="http://www.comm.ecowas.int/dept/stand.php?id=f_f1_act_add&amp;lang=en">http://www.comm.ecowas.int/dept/stand.php?id=f_f1_act_add&amp;lang=en</a></li> <li>• Maitlanda, C. F. &amp; van Gorp, A. (2009) 'Beyond Harmonization: ICT Policymaking in Regional Economic Communities' <i>The Information Society</i>, 25 (1) pp. 23–37</li> <li>• McCormick, P. K. (2005) 'The African telecommunications union: A Pan-African approach to telecommunications reform' <i>Telecommunications Policy</i>, 29 (7) pp. 529-548</li> <li>• NEPAD (2006) <i>Draft Final Protocol on High Level Policy and Regulatory Framework for NEPAD Broadband ICT Infrastructure for Eastern and Southern Africa</i>. NEPAD e-Africa Commission. Available online at <a href="http://www.itu.int/ITU-D/projects/ITU_EC_ACP/hipssa/Activities/WA/docs/Final_draft_protocol.pdf">http://www.itu.int/ITU-D/projects/ITU_EC_ACP/hipssa/Activities/WA/docs/Final_draft_protocol.pdf</a></li> </ul>
<b>Activity</b>	Using the example provided in this lecture, students will discuss the state of regional policy and regulation in Africa in general and how regional system of governance can be improved to improve policy, regulation and market structure in the region
<b>About your Lecturer</b>	See above.

## Session 7: Changing Boundaries in Policies, Regulation and Market Structure – convergence, broadband and NGN

<b>Presenter</b>	Luci Abrahams
<b>Outcomes</b>	<p>Participants will be able to describe how developments in technology, policy, regulation, markets etc., work together in defining current and future trends, inter alia:</p> <ul style="list-style-type: none"> <li>• Analyze the implications of convergence on policy, regulation and sector performance</li> <li>• Analyze the link between policies and programs, regulatory frameworks and market structure for deployment of high-speed, low-cost broadband networks</li> <li>• Describe the policy and regulatory ecosystem of Next Generation Networks</li> <li>• Question how NGN redefined policy and regulatory issues and the market structure</li> <li>• Distinguish between policies and regulation for traditional networks (POTS) and the Next Generation Networks</li> </ul>
<b>Questions to guide you for pre-reading</b>	<ul style="list-style-type: none"> <li>• What are the key forces and modes of convergence?</li> <li>• What are the market and regulatory implications of convergence?</li> <li>• Why are more horizontal markets effective in a converged environment?</li> <li>• What policies should be put in place to stimulate broadband?</li> <li>• What are the major market design and regulatory issues in NGN environment?</li> <li>• How are countries addressing emerging NGN policy and regulatory issues?</li> <li>• What are the implications of NGN for Africa?</li> </ul>
<b>Core Readings (Must reads)</b>	<ul style="list-style-type: none"> <li>• OECD (2007) 'Convergence and Next Generation Networks', Ministerial Background Report, Organisation of Economic Co-operations &amp; Development, Paris, <a href="http://www.oecd.org/dataoecd/25/11/40761101.pdf">http://www.oecd.org/dataoecd/25/11/40761101.pdf</a></li> <li>• Wey C, Baake P &amp; Heitzler S (2006) Ruling the New and Emerging markets in the Telecommunications sector: The Emergence of NGN, ITU, <a href="http://www.itu.int/osg/spu/ngn/documents/Papers/Wey-060323-Prem-v1.1.pdf">http://www.itu.int/osg/spu/ngn/documents/Papers/Wey-060323-Prem-v1.1.pdf</a></li> <li>• Gillwald A (2003) National convergence policy in a Globalised World: Preparing South Africa for Next Generation Networks, Services and Regulation, LINK Centre Public Policy Research Paper No 4. available at: <a href="http://link.wits.ac.za/papers/ag20030707.pdf">http://link.wits.ac.za/papers/ag20030707.pdf</a></li> <li>• Faulhaber, G &amp; Hogedorn C (2000) 'The Market Structure of Broadband Telecommunications', Journal of Industrial Economics, Vol XLVIII, Wiley-Blackwell, Hoboken NJ, <a href="http://rider.wharton.upenn.edu/~faulhabe/Broadband.pdf">http://rider.wharton.upenn.edu/~faulhabe/Broadband.pdf</a></li> </ul>

<p><b>Additional References</b></p>	<ul style="list-style-type: none"> <li>• Kushida, K &amp; Oh, S (2006) The Political Economies of Broadband Development in Korea and Japan, <i>Asian Survey</i> Vol. 47 Issue 3 May/June 2007, <a href="http://www.escholarship.org/uc/item/8227">http://www.escholarship.org/uc/item/8227</a></li> <li>• TRAI (2006) Recommendations on Issues Pertaining to Next Generation Networks (NGN), Telecommunications Regulatory Authority of India, New Delhi <a href="http://www.trai.gov.in/trai/upload/Recommendations/47/recom20mar06.pdf">www.trai.gov.in/trai/upload/Recommendations/47/recom20mar06.pdf</a></li> <li>• Bezzina, J &amp; Terrab, M (2005) Impacts of New Technologies on Regulatory Regimes, Introductory Comments, InfoDev and CITPO, The World Bank, Global ICT Department, <a href="http://www.dirsi.net/espanol/files/documentos%20varios/research/impact_of_new_technologies_on_regulatory_regimes.pdf">www.dirsi.net/espanol/files/documentos%20varios/research/impact_of_new_technologies_on_regulatory_regimes.pdf</a></li> <li>• Devoteam Siticom &amp; Cullen International (2003) Regulatory implications of the introduction of next generation networks and other new developments in electronic communications, The European Commission, Luxembourg, <a href="http://ec.europa.eu/information_society/policy/ecom/doc/library/ext_studies/regulatory_implications_study.pdf">http://ec.europa.eu/information_society/policy/ecom/doc/library/ext_studies/regulatory_implications_study.pdf</a></li> <li>• Henten, A (2002) Regulation in a liberal, international and converging communication market in Cammaerts B and Burgelman JC (eds.) <i>Beyond Competition: Broadening the scope of telecommunications policy</i>, VUB University Press, Brussels.</li> </ul>
<p><b>About your Lecturer</b></p>	<p>Luci is a Senior Lecturer at Wits and Director of the LINK Centre. She was instrumental in the establishment of the ICT4D programme, precursor of the LINK Centre, in 1996. Her areas of research are 'institutions and economic sectors in the network knowledge economy'. She has served in many leadership positions in the public sector and currently serves on the Council on Higher Education.</p> 

<b>Take-home Exam-equivalent Assignment</b>	
<b>Topics</b>	<p>The take-home exam-equivalent assignment will assess your ability to apply your understanding of:</p> <ul style="list-style-type: none"><li>• Network infrastructures and market structures</li><li>• Relationship between policy and market design</li><li>• Relationship between market structures and regulatory approaches</li><li>• Influence of new technologies and convergence on market boundaries</li><li>• Regulatory implications of these developments</li></ul>
<b>Preparation</b>	<p>Required and recommended readings and additional sources you can identify.</p>