

Digital Information Systems: Understanding Technology, Innovation & Business

Student hours: Thursdays 11am – 1pm
Office 226, Garden Suite, MHL

Module Overview Information Systems

Information Systems (IS) are treated in this module within the context of the social sciences and cultural studies. This core module is set up to be an intellectually innovative and interdisciplinary programme. This allows students to integrate established knowledge on the development and management of information systems along with the critical study of emerging domains of digital information innovation, such as big data, agile learning systems, and artificial intelligence (AI). The intention is to offer students a management and organisational perspective on the role of IS in business and how these are managed.

Students will already be familiar with an array of digital systems, in this module, we critically address opportunities for new business models, new forms of information governance, and the impact on new ways for organisation engagement.

The aim of this module is to provide students with the methods and approaches used by managers to exploit new digital opportunities and position their organisations to realise enhanced business value. The module is not technically orientated but designed to show how information systems are conceived, designed, implemented, and managed in contemporary organisations. By the end of this module, students will be equipped with the necessary tools to deal with current business issues including digital transformation through information systems and emerging business models via technological innovations.

The following topics are covered during this module:

- Digital information security and management strategies
- The information society
- Information seeking and sharing e.g. the use of social media in enterprise
- Information storage e.g. cloud computing
- Information gathering and analysis e.g. big data and predictive analytics
- Information management/systems and innovation in organisations
- Knowledge management and learning systems
- Information creation e.g. co-creation and emerging business models
- Future technologies and organisations

OBJECTIVES –relevance of the module

This module aims to provide students with new knowledge and skills to assess and integrate key concepts of managing digital information systems in organisations. Students will address management issues related to a range of core digital systems (from large enterprise and then through to personal information management (PIM)). The module will enable students to learn critical skills necessary to evaluate

the suitability of Information System needs. The key point here is that students understand that organisations spend a lot of time and money reviewing IT resources and do not blindly adopt technology just for the sake of it. Additional core learning is developed through case study work and guest lectures delivered by the industry experts (TBC).

Learning outcomes

Upon completion of this module student's will be able to:

- Contribute to informed discussion of the dilemmas faced during the digital information life cycle;
- Appraise information systems and recognise the relationship with strategy;
- Analyse the potential disruptive digital innovations regarding products, services and sustainability;
- Assess business value of digital technologies using academic and practitioners' methods and approaches;
- Deconstruct complex technology-oriented solutions;
- Engage critically with theory and consultancy practices.

MODULE STRUCTURE: LECTURES AND SEMINARS

Format	Number	Frequency	Duration
Lectures	22	1 per week (Terms 1, 2 and 3)	1 hour
Seminars	8	1 every two weeks (Term 1 and 2)	1 hour

Lectures provide the basis of the taught material, and the seminars provide a structured programme to reinforce the taught content and knowledge and encourage independent study.

Some of the seminars are designed around preparatory work that is undertaken by participants working in small groups so that you can explore and enter into a discussion of the issues. The module leader will take the leading role, but you are expected to make major contributions to maximise the learning experience and enjoyment of the module.

STUDENT WORKLOAD

In addition to attending lectures, classes, undertaking preparation for classes, formative and summative assessments, you are expected to undertake independent reading and learning to maximise your knowledge and experience.

As a guide, the University Teaching and Learning Handbook outlines that a single undergraduate module as a study unit comprising 200 hours of Student Learning Activity Time (SLAT) per annum. The SLAT hours include all formal contact hours (lectures, classes, seminars, workshops, etc.), the time devoted to background reading, and all preparation and reading time associated both with the formal

contact hours and the formative and summative assessments (including essays, other assignments and examinations). Suggestions as to how you can make good use of your time for studying the unit will be provided during lectures and on DUO.

SUMMATIVE ASSESSMENT

This module is assessed by two assignments.

ASSIGNMENT	% OF MARK	DATE SET	EVALUATION
Individual written	40%	Term 2	2,000 words max
Individual written	60%	Term 3	3,000 words max

Details of the summative assignment together with the submission deadlines will be posted on DUO.

Part One | Term I

The first part of the module provides a view of state-of-the-art IS applications, cloud computing, big data, cyber-defence and social networking/media and smart mobile performance tools and discusses how they are integrated into business life and used to improve organisational performance. This part of the module also focuses on sustainability and core policy and legislative frameworks (DRM, informational privacy, Computer Misuse Act, and Intellectual Property).

Part Two | Terms II and III

The second part of the module looks at the adoption of IS in contemporary organisations. We will discuss the adoption of IS across various organisational functions, such as the customer relationship management and supply chain management. Further, we shall see how some organisations have centred themselves on their information systems and highlight critical issues in the debates regarding such adoptions of IS.

Michaelmas Term Lecture Overview

LECTURES	LECTURE TOPIC
1.	Introduction to Digital Information Systems: Concepts and Perspectives
2.	Smart Cities and IoT
3.	Secure data? Privacy, openness and Transparency
4.	Digital Governance and Information Systems for the Public Sector [NHS Hack]
5.	Social Computing and Big Data
6.	Situating Business Networks: Digital Labour and Exploitation
7.	Diversity and the culture of STEM: Leaders in information systems

8.	Global Application of IS: Handling Disruption, Disaster Planning and Humanitarian Initiatives
9.	Elites and Power in the Information Society
10.	Open Innovation with AI, AR, and AU, and review

Epiphany Term Lecture Overview

LECTURES	LECTURE TOPIC (TENTATIVE)
1.	Information Systems in Businesses
2.	Information Systems and Business Strategies
3.	Database and Information Management
4.	Knowledge Management
5.	Information Systems and Supply Chain Management
6.	Information Systems and Customer Relationship Management
7.	Information Systems Implementation in Organisations
8.	Managing Information Systems Projects
9.	Electronic Commerce
10.	Blockchain Technology and Applications

Textbooks

The following textbooks cover most of the module material and you are advised to **buy at least one** of these:

In this module, we will not rely on a single core textbook. Students may refer to Schilling (2018) and Laudon and Laudon (2016). These textbooks are key references for this module and include topics that will not be covered in depth in this module. Students will be expected to refer to other books and journal articles as appropriate. Lecture slides will include relevant references for the topic of the lecture.

KEY TEXTBOOKS:

Laudon, K.C. and Laudon, J.P., 2016 [2018]. *Management Information Systems. Managing the Digital Firm. 14th Edition.* London, UK: Pearson Education.

Schilling, M., 2018. *Strategic Management of Technological Innovation.* 5th Edition. McGraw-Hill Education.

1. General Reading

OTHER BOOKS:

Brynjolfsson, E. and McAfee, A., 2014. *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*. 1st Edition. New York, NY, USA: W.W. Norton & Company.

Greengard, S., 2015. *The Internet of Things*. 1st Edition. Cambridge, MA, USA: The MIT Press.

Provost, F. and Fawcett, T., 2013. *Data Science for Business: What you need to know about data mining and data-analytic thinking*. 1st Edition. Sebastopol, CA, USA: O'Reilly Media.

Ries, E., 2011. *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. 1st Edition. New York, NY, USA: Crown Publishing Books.

Ward, J. and Elizabeth, D., 2012. *Benefits management: How to Increase the Business value of your IT Projects*. 2nd Edition. Chichester, UK: John Wiley & Sons.

Course Content in Detail

LECTURE 1: Introduction to Digital Information Systems: Concepts and Perspectives

We begin the module by defining Information Systems and setting out the key characteristics. The lecture explores the theoretical foundations for the study of organisational and social innovation and the particular role of information systems in such change. Students will be introduced to concepts and perspectives of innovation from a range of disciplines.

The lecture introduces literature related to three broad themes: innovation and organisational change; information technology and organisational change; and information technology innovation and socio-economic change.

For each of these themes we identify and discuss relevant theoretical concepts and perspectives. The discussion of theories is structured regarding technical/rational along with socially and culturally embedded approaches.

Laudon and Laudon textbook chapter

Chapter 1: Information Systems in a Global Business Today, especially sub-section 1-3.

Reading

Brynjolfsson E (2010), *Wired for innovation*; The MIT Press, Cambridge, MA.
Willcocks, L., and Mingers, J. (2004) *Social theory and philosophy for information systems* Chichester, Wiley.

Yoo, Y., Henfridsson, O., & Lyytinen, K. (2010). Research commentary-The new organising logic of digital innovation: An agenda for information systems research. *Information Systems Research*, 21(4), 724-735.

WIRED MAGAZINE - Brian Barrett
Security

Think FaceApp Is Scary? Wait Till You Hear About Facebook

<https://www.wired.com/story/faceapp-privacy-backlash-facebook/>

LECTURE 2: Smart Cities and Internet of Things (IoT) [updated]

The lecture provides students with a practical and theoretical insight into the processes and practices of developing contemporary digital Information Systems within physical social and cultural settings. The lecture reflects the diversity of contemporary information systems contexts; discussing how we should manage the development of complex digitally enabled systems and services within the context of smart cities.

The learning outcomes are focused on new technologies and practices including cloud and grid computing, open-source development, Software as a Service, mashups, smart mobile technology and ubiquitous computing, mediating mutual adjustment and mass-scale mediated communities.

Laudon and Laudon textbook chapter

Chapter 3: IS, Organisations and Strategy – concentrate on the opening case notes 3-1, 3-2.

Reading – extracts from:

Almeida, V.A., Doneda, D. and da Costa, E.M., 2018. Humane Smart Cities: the need for governance. *IEEE Internet Computing*, 22(2), pp.91-95.

Caragliu, A., & Del Bo, C. F. (2016). Do smart cities invest in smarter policies? Learning from the past, planning for the future. *Social Science Computer Review*, 34(6), 657-672.

Gaffney, C., & Robertson, C. (2016). Smarter than Smart: Rio de Janeiro's Flawed Emergence as a Smart City. *Journal of Urban Technology*, 1-18.

Wiig, A. (2015). IBM's smart city as techno-utopian policy mobility. *City*, 19(2-3), 258-273.

WIRED MAGAZINE - Francesca Bria

You're thinking about smart cities in completely the wrong way

<https://www.wired.co.uk/article/reboot-britain-francesca-bria>

LECTURE 3: Secure data? Privacy, openness and Transparency

The lecture provides a detailed consideration of the concept of informational privacy, the open data movement and transparency. These topics lie at the intersection of diverse contemporary issues including, public sector reform, digital ecosystems and social networking, along with the global and national regulation of business.

The lecture content is international in focus, and reviews contemporary issues arising from new technologies, new policies of governments, new practices and business models in the private sector.

Students are introduced to topics that include:

- personal privacy and identity systems;

- motivations for information sharing and transparency and its potential for driving beneficial change;
- the protection of sensitive personal data including medical and financial information;
- data-mining in the context of national security and anti-terrorism policies;
- communications surveillance policies;
- behavioural studies of privacy attitudes and the evolution of trust and consent in online environments.

Laudon and Laudon textbook chapter

Chapter 4: Ethical and Social Issues in IS, and Chapter 8: Securing ISs. Focus on Opening Case Notes for Seminar II.

Reading:

Cohen, J. E. (2012). What privacy is for. *Harv. L. Rev.*, 126, 1904.

Samuel Warren and Louis Brandeis, "The Right to Privacy", 4 Harvard Law Review 193 (1890).

Stephen Margulis, "Privacy as a Social Issue and Behavioural Concept", *Journal of Social Issues*, Vol.59, No.2, 2003, pp.243-261.

Depth Reading:

Cohen, J. E. (2003). DRM and Privacy. *Communications of the ACM*, 46(4), 46-49.

Hazell, R and Glover, M (2011) *The impact of Freedom of Information on Whitehall*. *Public Administration* 89(4), 1664–1681.

Leo Alexander, "Medical Science under dictatorship", *The New England Journal of Medicine*, July 1949, pp.39-47.

Lew McCreary, "What was privacy?", *Harvard Business Review*, October 2008;
O'Hara, K (2011) *Transparent Government, Not Transparent Citizens: A Report on Privacy and Transparency for the Cabinet Office*.

WIRED MAGAZINE - Alec Ross

Employment

Want job security? Try online security

<https://www.wired.co.uk/article/job-security-cybersecurity-alec-ross>

Students will also find there are a number of journal articles and some court decisions from the US Supreme Court and the European Court of Human Rights that are relevant to the module.

LECTURE 4: Digital Governance and Information Systems for the Public Sector

This lecture is about digital governance, including data alliances with commercial companies by the public sector and new policy around, for example, citizenship. The lecture will cover themes around digital public sector services and the widespread adoption of ICTs, smart technology availability and the causation effect of social media in public sector organisation. Students will be encouraged to critically understand large IS infrastructures and their possible failure e.g. NHS hack in 2018.

The lecture tackles what is a massive contemporary issue, which cumulatively transform and may 'producise' the nature of public services delivered to citizens.

This lecture covers the recent and likely future major organisational and technology change processes in the government sector.

Core topics include:

- the distinctive aspects of the public administration context for technology-enabled innovation;
- digital government and public sector reform;
- public sector ICT innovation and public value creation; the use of ICTs to streamline public services as part of wider business process changes;
- measuring and growing productivity via digital changes;
- 'digital by default' services and social media in government;
- and next-generation shifts to EDGE (Essentially Digital Governance).

Laudon and Laudon textbook chapter

Chapter 2: Global e-Business and collaboration. Focus on Opening Case 2-1, 2-2.

Reading

Ahn M.J. & Bretschneider S., 2011. Politics of E-Government: E-Government and the Political Control of Bureaucracy. *Public Administration Review*, 71(3), pp.414–424.

Bannister, F., & Connolly, R. (2015). The great theory hunt: Does e-government really have a problem? *Government Information Quarterly*. Vol. 32(1).

Fishenden J. & Thompson M., 2013. Digital Government, Open Architecture, and Innovation: Why Public Sector IT Will Never Be the Same Again. *Journal of Public Administration Research and Theory*, 23(4), pp.977–1004.

Depth reading:

Eriksson O. & Goldkuhl G., 2013. Preconditions for public sector e-infrastructure development. *Information and Organisation*, 23(3), pp.149–176.

Janssen M., Charalabidis Y. & Zuiderwijk A., 2012. Benefits, Adoption Barriers and Myths of Open Data and Open Government. *Information Systems Management*, 29(4), pp.258–268.

Kim, B. J. (2015). Political efficacy, community collective efficacy, trust and extroversion in the information society: Differences between online and offline civic/political activities. *Government Information Quarterly*, 32(1), 43-51. [paper by request from library exchange]

WIRED MAGAZINE - Matt Burgess

Will a robot take your job? 250,000 public sector admin jobs at risk

<https://www.wired.co.uk/article/will-robot-take-job-uk-public-sector>

Susan Crawford

Why Universities Need 'Public Interest Technology' Courses

<https://www.wired.com/story/universities-public-interest-technology-courses-programs/>

LECTURE 5: Social Computing and Big Data

The lecture is about social computing: the growing importance of lay publics and non-expert knowledge in spinning the fabric of the digital economy. Such a transformation toward a 'Social Web' is closely associated with the unprecedented diffusion and continuing development of light technologies such as smart phones, tablets, wearables and other digital applications.

The lecture unravels the ways in which social media are engineering social interaction for the production of social data as the source of value generation. IS's produce value by encoding social interaction into data that aggregated enter in the economic circuits of digital services and links with what is known as 'Big data'. The lecture examines how social media platforms standardise and organise data, and shows how social media deploys personalization strategies and how personalisation is inherently connected to big data economy.

Laudon and Laudon textbook chapter

Part II: Chapter 5: IT Infrastructure and Emerging Technologies, focus on 5-1, 5-2 and 5-3; Chapter 12: Enhancing Decision Making, focus on 12-1, 12-2 and 12,3.

Reading

Alaimo, C. and Kallinikos, J. (2015). "Encoding the everyday: Social Data and its Media Apparatus", in *Big Data is not a monolith: Policies, practices, and problems*, Sugimoto, C, Ekbia, H. and Mattioli M. (eds.) Cambridge, MA: The MIT Press (forthcoming).

Constantiou, I. and Kallinikos, J. (2015). New games, new rules: Big data and the changing context of strategy. *Journal of Information Technology*, 30 (1).

Depth reading:

Van Dijck, J. (2013). *The culture of connectivity: A critical history of social media*. Oxford: Oxford University Press.

Weinberger, D. (2007). *Everything is miscellaneous: The power of the new digital disorder*. New York: Times Books.

Zittrain, J. (2008) *The Future of the Internet*. New Haven: Yale University Press.

WIRED MAGAZINE – Brian Barrett

McDonald's bites into big data

<https://www.wired.com/story/mcdonalds-big-data-dynamic-yield-acquisition/>

LECTURE 6: Situating Business Networks: Digital Labour, the Gig Economy and Exploitation

This lecture discusses managerial, economics and innovation aspects of business networks. History and foundations of business networking are introduced to discuss the managerial challenges of different IS-business practices – in particular the focus is on the new 'gig economy' and transference of power within digital labour structures. The lecture introduces management aspects of the impact of diverse technologies on interorganisational relationships, new organisational forms, such as networked organisations, and digital markets. Strategies for IS-business innovation including the impact of IS services and similar developments are discussed.

Laudon and Laudon textbook chapter

Chapter 13: Building ISs, focus on 13-1, 13-2, 13-3, 13-4; Chapter 14: Managing Projects, focus on 14-1, 14-2, and 14-3.

Reading:

De Stefano, V. (2015). The rise of the 'just-in-time workforce': On-demand work, crowd work and labour protection in the 'gig-economy'.

Fuchs, C. (2014). Theorising and analysing digital labour: From global value chains to modes of production. *The Political Economy of Communication*, 1(2).

Depth reading:

Schaupp, L. C., & Bélanger, F., 2013. The Value of Social Media for Small Businesses. *Journal of Information Systems*, 28(1), 187-207.

Terranova, T. (2000). Free labor: Producing culture for the digital economy. *Social text*, 18(2), 33-58.

Van Yperen, N.W., Wörtler, B. and De Jonge, K.M., 2016. Workers' intrinsic work motivation when job demands are high: The role of need for autonomy and perceived opportunity for blended working. *Computers in Human Behavior*, 60, pp.179-184.

WIRED MAGAZINE - Paris Martineau

California Lawmakers Move to Protect Gig-Economy Workers

<https://www.wired.com/story/california-lawmakers-move-protect-gig-economy-workers/>

Alexandrea J. Ravenelle

For Workers in the Gig Economy, Client Interactions Can Get ... Weird

<https://www.wired.com/story/book-excerpt-gig-economy-weirdness/>

LECTURE 7: Diversity and the culture of STEM: Leaders in information systems

This lecture introduces an overview of the information culture surrounding science, technology, engineering, and mathematics (STEM) and the importance of these contributions to contemporary information systems. Students will learn about specific contributions of women across a variety of disciplines and will gain a broad perspective on how these contributions played a larger role in the advancement of

human knowledge and technological achievement. Student's will also grapple with how both historic and modern biases within the STEM disciplines, as well as in representations of women and girls in media and popular culture, can affect outcomes in these areas.

Laudon and Laudon textbook chapter:

LIKE MANY OTHER TEXTBOOKS, THIS TEXTBOOK DOES NOT COVER THIS TOPIC. [to be discussed]

Students are encouraged to discover their own reading in this area.

Hardey, M. *The Culture of Women in Tech. An Unsuitable Job for a Women.* Published November 11, 2019. [book]

WIRED MAGAZINE – Emily Dreyfuss

Wake up to women's empowerment

<https://www.wired.com/story/melinda-gates-tech-women-empowerment/>

LECTURE 8: Global Application of IS: Handling Disruption, Disaster Planning and Humanitarian Initiatives

The lecture is anchored on two sets information scenarios:

1. First, looking at disasters and humanitarian emergencies often located in areas with weak physical and institutional infrastructures. We look at the intervention of aid and the management of emergency support in the broader context of IS development;
2. Second, IS continues to open new possibilities for the mitigation, preparedness and response to disasters, but its effective use requires a change in the collaboration of organisations and affected communities. We critically examine the potential opened by IS innovation for the handling of disruptions.

Case studies and readings will examine emerging topics such as crowdsourcing and geographic and geodetic intelligence.

Laudon and Laudon textbook chapter

Chapter 15: Managing Global Systems, focus on 15-3 and 15-4.

Reading

IFRC (2013) World Disasters Report – Focus on Technology and the Future of Humanitarian Action, International Federation of Red Cross and Red Crescent Societies.

Day, J.M., Junglas, I., Silva, L. (2009) Information low impediments in disaster relief supply chains, *Journal of the Association for Information Systems*, 10, 8, pp 637-660.

Depth reading:

Shklovski, I., Palen, L. and Sutton, J. (2008) Finding Community Through Information and Communication Technology During Disaster Events, Proceedings of the 2008 ACM Conference on Computer Supported Cooperative Work, pp. 127-136.

Garshnek, V. and Burkle, F.M.J. (1999) Applications of Telemedicine and Telecommunications to Disaster Medicine: Historical and future perspectives, *Journals of America, Medical Informatics Association*, 6, 26-37.

WIRED MAGAZINE – Sara Harrison

To help migrants at the border (US)

<https://www.wired.com/story/help-migrants-border-aid-groups-deploy-tech/>

Chris Stokel-Walker

Terrorism

Does the internet really radicalise terrorists? It's (really) complicated

<https://www.wired.co.uk/article/terrorist-radicalisation-facebook-twitter-isis>

LECTURE 9: Elites and Power in the Information Society – and criminalisation!

This might be the most important lecture. The lecture addresses themes of tech and data equality directly related to innovation; 'work'; infrastructures and the networks relevant to the information society. The context of flows and informational transparency are set with opportunities for exploitation and negative experiences as a direct result of network infrastructures and accessibility. The lecture moves away from the 'old' context of the 'digital divide' (the have's and the have not's) to respond to the business design of innovation and ways that this put barriers in the way of vulnerable individuals. Also allowing for the new ways that crime is monitored and infringes on privacy rights across IS.

This topic is missing / overlooked in the information system and management textbooks

Key reading:

Balachandra, L., Briggs, A. R., Eddleston, K., & Brush, C. (2013). Pitch like a man: Gender stereotypes and entrepreneur pitch success. *Frontiers of Entrepreneurship Research*, 33(8), 2.

Duffy, B. E. (2016). The romance of work: Gender and aspirational labour in the digital culture industries. *International Journal of Cultural Studies*, 19(4), 441-457.

Hurley, E.E., 2017. *Surveillance Technology and the Neoliberal State: Expanding the Power to Criminalize In a Data-Unlimited World* (Doctoral dissertation, Virginia Tech).

McClain, N., 2019. Caught inside the black box: Criminalization, opaque technology, and the New York subway MetroCard. *The Information Society*, pp.1-21.

Smith, G.J. and O'Malley, P., 2017. Driving politics: Data-driven governance and resistance. *The British Journal of Criminology*, 57(2), pp.275-298.

WIRED MAGAZINE - Matt Burgess

Censorship

Facebook changes Trending Topics after 'bias' allegations

<https://www.wired.co.uk/article/facebook-bias-newsfeed>

LECTURE 10: Open Innovation with AI, AR, and AU, and review

Innovation - in products, processes, and business models - is one of the most important topics for companies today and will likely be even more important in the future. This lecture focuses on important trends in 'open innovation', i.e., strategies to tap new product ideas, technologies, and so on, from outside the company that include artificial intelligence (AI), augmented reality (AR) along with the innovations that allow for enhancement to technology acquisitions, alliances, client-supplier relationships, crowd sourcing, open corporate campus, and innovation ecosystems.

In this lecture and in summing up the module so far we ask: How far do recent innovations in information systems, such as AI, herald an unprecedented economic and social transformation? This lecture provides a critical evaluation of questions challenging the relentless technological determinism of much debate, and reframing the issues involved within a political-economic and systems management approach. Finally we speculate about the uncertainty around contemporary and future trends for information systems.

Laudon and Laudon textbook chapter

Chapter 13 [revision from previous lectures].

Reading:

Boyd, R., & Holton, R. J. (2018). Technology, innovation, employment and power: Does robotics and artificial intelligence really mean social transformation?. *Journal of Sociology*, 1440783317726591.

Carbonell, J., Sánchez-Esguevillas, A., & Carro, B. (2016). The role of metaphors in the development of technologies. The case of the artificial intelligence. *Futures*, 84, 145-153.

Hengstler, M., Enkel, E., & Duelli, S. (2016). Applied artificial intelligence and trust—The case of autonomous vehicles and medical assistance devices. *Technological Forecasting and Social Change*, 105, 105-120.

Leng, J., Shoura, M., McLeish, T.C., Real, A.N., Hardey, M., McCafferty, J., Ranson, N.A. and Harris, S.A., 2019. Securing the future of research computing in the biosciences. *PLoS computational biology*, 15(5), p.e1006958.

WIRED MAGAZINE – Nitasha Tiku

Three years of misery inside Google

<https://www.wired.com/story/inside-google-three-years-misery-happiest-company-tech/>

Seminars

Session One – Digital Information Systems: The Dawn of a Global Community, Elitist Tribes or Networked Publics?

This seminar takes a unique approach to IS asking a question that has often been posed about transformative new technologies: *Will such technologies connect us or divide us?*

Will networked information technologies produce a new global cosmopolitanism characterised by enlightened methods of connected data, elites of information tribes, or simply open networked publics?

The seminar blends theories, on-going research insight, and real life examples to understand the social and economic implications of these significant developments.

Seminar topics for discussion:

- Configuring the networked self;
- Link information architectures with social systems and the digital economy Understand information infrastructures and the role they play in the development of the digital economy
- Understand personalisation strategies and their implications

Reading

Carr, N 2011, *The Shallows: What the Internet Is Doing to Our Brains*, W.W. Norton, New York.

Cohen, J. E. (2012). Configuring the networked citizen.

Langlois, G., Elmer, G., McKelvey, F., & Devereaux, Z. (2009). Networked publics: The double articulation of code and politics on facebook. *Canadian Journal of Communication*, 34(3), 415-434.

Warren, A.M., Sulaiman, A. and Jaafar, N.I., 2014. Facebook: The enabler of online civic engagement for activists. *Computers in Human Behavior*, 32, pp.284-289.

Hardey, M. and Atkinson, R., 2018. Disconnected: Non-Users of Information Communication Technologies. *Sociological Research Online*, 23(3), pp.553-571.

Session Two – Data Blending and Informed Consent

Metadata and data have become a regular currency for citizens to pay for their communication services and security -- a trade-off that has nestled into the comfort zone of most people. This seminar deconstructs the ideological grounds of datafication. Datafication is rooted in problematic ontological and epistemological claims. Dataism, as this conviction is called, is so successful because masses of people -- naively or unwittingly -- trust their personal information to corporate platforms. The notion of trust becomes more problematic because people's faith is extended to other public institutions (e.g. academic research, law enforcement, the NHS) that handle their (meta)data. The interlocking of government, business and public services in the adaptation of information systems means that students will want to look more critically at the entire ecosystem of connective technologies.

- Datafication and "life mining" as a new scientific paradigm;

- Dataism: unraveling datafication's ideological underpinnings;
- Trust in institutions?
- Dataveillance and the struggle for credibility

Reading

Cohen, J. E. (2014). The surveillance-innovation complex: The irony of the participatory turn.

Morrow, J. I. (2001). Informed consent should be sought before data are used by registries. *British Medical Journal*, 322, 549.

Van Dijck, J. (2014). Datafication, dataism and dataveillance: Big Data between scientific paradigm and ideology. *Surveillance & Society*, 12(2), 197.

Session Three – Practical Authority: Understanding the Public Value of Digital Information Systems

This seminar develops new perspectives about practitioner engagement and excellence in delivering public programs, developing strategy for organisations, and leading a variety of organisational transitions in a connected public sector context. Our focus is on 'eHealth' information to give students some appreciation of connected information systems and infrastructures.

Reading:

Fox, N. J. (2018). Personal health technologies, micropolitics and resistance: a new materialist analysis. *Health*, 21(2), 136-153.

Lupton, D. (2014). Critical perspectives on digital health technologies. *Sociology Compass*, 8(12), 1344-1359.

Hardey, M., 2019. On the body of the consumer: performance-seeking with wearables and health and fitness apps. *Sociology of health & illness*.

Seminar Four – Disruptive innovation, platform companies and workers' rights

This seminar about the processes and practicalities of how organisations and business have (should) managed the deployment of complex internet and smart-enabled systems and services. Building on the Seminar II themes of data ethics, we look at different types of innovation theories, and we apply them to problems that tend to arise in business contexts. The primary aim of the seminar is *not* to present students with solutions or guidance about dogmatically adapting to changing architectures of information systems, but to support their theoretical understanding with a strong practical experience of the pressures and difficulties of systems development today.

Topics as points of discussion include:

- What are the information and moral responsibilities of managers? Is the main purpose of business is to increase profits regardless of the impact on employees, customers and others?
- What, if anything, is wrong with data exploitation? If consumers and employees voluntarily choose to give up their data isn't this a fair opportunity for business?

- What are the development challenges in small start-ups compared with large organisations?
- How do business leaders succeed in leveraging existing development platforms?

Reading, extracts from:

Carr, N. G. (2008): *The Big Switch*. W. W. Norton & Co.

Reis, E. (2011): *The Lean Startup*. Crown Business. [extracts]

Beas, M.I. and Salanova, M., 2006. Self-efficacy beliefs, computer training and psychological well-being among information and communication technology workers. *Computers in Human Behavior*, 22(6), pp.1043-1058.

Robertson, B.W. and Kee, K.F., 2017. Social media at work: The roles of job satisfaction, employment status, and Facebook use with co-workers. *Computers in Human Behavior*, 70, pp.191-196.

Course Content in Detail (Epiphany Term 2019/2020)

LECTURE 1: Information Systems in Business Today

Laudon and Laudon textbook Chapter 1

Reading

Goel, L., Rehm, S. V., & Junglas, I. (2017). Using information systems in innovation networks: uncovering network resources. *Journal of the Association for Information Systems*, 18(8), 577-604.

Roberts, N., Campbell, D. E., & Vijayasarathy, L. R. (2016). Using information systems to sense opportunities for innovation: Integrating postadoptive use behaviors with the dynamic managerial capability perspective. *Journal of Management Information Systems*, 33(1), 45-69.

LECTURE 2: Information Systems and Business Strategies

Laudon and Laudon textbook Chapter 1 and 3

Reading

Martinez-Simarro, D., Devece, C., & Llopis-Albert, C. (2015). How information systems strategy moderates the relationship between business strategy and performance. *Journal of Business Research*, 68(7), 1592-1594.

Peppard, J., & Ward, J. (2016). *The strategic management of information systems: Building a digital strategy*. John Wiley & Sons.

LECTURE 3: Database and Information Management

Laudon and Laudon textbook Chapter 6

Reading

Kuznetsov, S. D. (2018). New storage devices and the future of database management. *Baltic Journal of Modern Computing*, 6(1), 1-12.

Coronel, C., & Morris, S. (2016). *Database systems: design, implementation, & management*. Cengage Learning.

LECTURE 4: Knowledge Management

Laudon and Laudon textbook Chapter 11

Reading

Alavi, M., & Leidner, D. E. (2001). Knowledge management and knowledge management systems: Conceptual foundations and research issues. *MIS Quarterly*, (25)1, 107-136.

Lai, Y. L., Hsu, M. S., Lin, F. J., Chen, Y. M., & Lin, Y. H. (2014). The effects of industry cluster knowledge management on innovation performance. *Journal of Business Research*, 67(5), 734-739.

LECTURE 5: Information Systems and Supply Chain Management

Laudon and Laudon textbook Chapter 9

Reading

- Jones, E. C., & Gupta, S. (2015). Hospital Supply Chain Management by Implementing RFID. *International Journal of Supply Chain Management*, 4(3).
- Qrunfleh, S., & Tarafdar, M. (2014). Supply chain information systems strategy: Impacts on supply chain performance and firm performance. *International Journal of Production Economics*, 147, 340-350.
- Lee, Z. W. Y., Chan, T. K. H., Chong, A. Y-L., & Thadani, D. R. (2019). Customer Engagement Through Omnichannel Retailing: The Effects of Channel Integration Quality. *Industrial Marketing Management*, 77, 90-101.

LECTURE 6: Information Systems and Customer Relationship Management

Laudon and Laudon textbook Chapter 9

Reading

- Khodakarami, F., & Chan, Y. E. (2014). Exploring the role of customer relationship management (CRM) systems in customer knowledge creation. *Information & Management*, 51(1), 27-42.
- Chan, T. K. H., Zheng, X.B., Cheung, C. M. K., Lee, M. K. O., & Lee, Z. W. Y. (2014). Antecedents and consequences of customer engagement in online brand communities. *Journal of Marketing Analytics*, 2(2), 81-97.

LECTURE 7: Information Systems Implementation in Organisations

Laudon and Laudon textbook Chapter 3 and 13

Reading

- Bala, H., & Venkatesh, V. (2013). Changes in employees' job characteristics during an enterprise system implementation: A latent growth modeling perspective. *MIS Quarterly*, 37(4), 1113-1140.
- Kim, H. W., & Kankanhalli, A. (2009). Investigating user resistance to information systems implementation: A status quo bias perspective. *MIS Quarterly*, 33(3), 567-582.
- Rezvani, A., Dong, L., & Khosravi, P. (2017). Promoting the continuing usage of strategic information systems: The role of supervisory leadership in the successful implementation of enterprise systems. *International Journal of Information Management*, 37(5), 417-430.

LECTURE 8: Managing Information Systems Projects

Laudon and Laudon textbook Chapter 14

Reading

- Aladwani, A. M. (2002). An integrated performance model of information systems projects. *Journal of Management Information Systems*, 19(1), 185-210.
- Kanwal, N., Zafar, M. S., & Bashir, S. (2017). The combined effects of managerial control, resource commitment, and top management support on the successful delivery of information systems projects. *International Journal of Project Management*, 35(8), 1459-1465.
- Petter, S., DeLone, W., & McLean, E. R. (2013). Information systems success: The quest for the independent variables. *Journal of Management Information Systems*, 29(4), 7-62.

LECTURE 9: Electronic Commerce

Laudon and Laudon textbook Chapter 10

Reading

- DeLone, W. H., & Mclean, E. R. (2004). Measuring e-commerce success: Applying the DeLone & McLean information systems success model. *International Journal of Electronic Commerce*, 9(1), 31-47.
- Gavet, M. (2014). The CEO of Ozon on Building an e-Commerce Giant in a Cash-Only Economy. *Harvard Business Review*, 92(7/8), 38-41.
- Kurnia, S., Choudrie, J., Mahbubur, R. M., & Alzougool, B. (2015). E-commerce technology adoption: A Malaysian grocery SME retail sector study. *Journal of Business Research*, 68(9), 1906-1918.
- Pappas, I. O., Kourouthanassis, P. E., Giannakos, M. N., & Lekakos, G. (2017). The interplay of online shopping motivations and experiential factors on personalized e-commerce: A complexity theory approach. *Telematics and Informatics*, 34(5), 730-742.

LECTURE 10: Blockchain Technology and Applications

Reading

- Crosby, M., Pattanayak, P., Verma, S., & Kalyanaraman, V. (2016). Blockchain technology: Beyond bitcoin. *Applied Innovation*, 2(6-10), 71.
- Iansiti, M., & Lakhani, K. R. (2017). The truth about blockchain. *Harvard Business Review*, 95(1), 118-127.
- Yli-Huumo, J., Ko, D., Choi, S., Park, S., & Smolander, K. (2016). Where is current research on blockchain technology A systematic review. *PloS one*, 11(10), e0163477.

Seminars (TBC)

TERMs II and III Indicative content - Topics in Advanced Information System Management

This part of the module aims to give the students further theoretical and practical insights into the key issues informing the design of contemporary and processes of Information Systems (IS). The learning material relates the diversity of challenges facing contemporary IS development.

Lectures

The aim of the lectures in Terms II and III is to set out the significant services in the context of technology-based businesses and organisations, or as part of entrepreneurship within an existing enterprise or public institution.

This part of the module neither requires, nor teaches detailed programming techniques, but instead focuses on teaching IS skills through practices and to sensitise these skills through the discussion of pertinent theoretical themes identified in the literature.

Topics addressed will be: Digital infrastructure innovation; Digital platform strategies; Designing technology affordance diversity; Understanding technology performances; Amplified information; The technological organisation; Global crowd innovation with IT; Global technology innovation tussles; Business innovation with information technology. The lectures are intended by way of introduction to a range of operational information techniques. The particular techniques taught may vary slightly from year to year. Topics normally covered are: inventory models, queuing theory, replacement, critical path analysis, dynamic programming, and game theory.

Seminars

The weekly seminars will consist of presentations and discussions offering students opportunity to critically reflect on theoretical and pragmatic issues related to the subject matter of the course, such as; the IT artefact and ecosystem, the role of IT in business innovation, understanding the paradoxes of technology performances, intimate technology experiences, IT mediated team-working, the IT-enabled organisation, innovating global IT mediated crowds, innovation as organisational tussles, and the role of IT-based innovation for business development.

Indicative reading (TBC)

- Arthur, B. (2009): *The Nature of Technology*. Free Press
Baldwin, C. Y. and K. B. Clark (2000): *Design Rules*. MIT Press; Beniger, J. R. (1986): *The Control Revolution*. Harvard University Press
Benkler, Y. (2006): *The Wealth of Networks*. Yale University Press
Braa, K, C. Sørensen, and B. Dahlbom, ed. (2000): *Planet Internet*. Studentlitteratur
Carr, N. G. (2014): *The Glass Cage*. W. W. Norton & Co
Ciborra, C. (2002): *The Labyrinths of Information*. OUP
Dourish, P. (2001): *Where the Action Is*. MIT Press

- Elliott, A. and J. Urry (2010): *Mobile Lives*. Routledge
- Felstead, A., N. Jewson, & S. Walters (2005): *Changing Places of Work*. Palgrave Macmillan
- Frischmann, B. M. (2012): *Infrastructure*. OUP; Garud, R., Kumaraswamy, A., & Langlois, R., ed. (2003) *Managing in the Modular Age*. Blackwell
- Gawer (2009): *Platforms, Markets and Innovation*. Edward Elgar
- Goffman, E. (1959): *The Presentation of Self in Everyday Life*. Bantam
- Gratton, L. (2011): *The Shift: The Future of Work is Already Here*. Collins
- Greenfield, A. (2006): *Everyware*. Peachpit Press
- Harper, R. (2010): *Texture: Human Expression in the Age of Communications Overload*. The MIT Press
- Hislop, D., ed. (2008): *Mobility and Technology in the Workplace*. Routledge
- Hodder, I. (2012): *Entangled*. John Wiley & Sons
- Kallinikos (2011): *Governing Through Technology*. Palgrave
- Kallinikos, J. (2006): *The Consequences of Information*. Edward Elgar
- Ling, R. (2008): *New Tech, New Ties*. The MIT Press
- Mansell, R. (2012): *Imagining the Internet*
- Mayer-Schonberger, V. (2009): *Delete*. Princeton University Press
- Mindell, D. A. (2015): *Our Robots, Ourselves*
- Norman, D. (1988): *The Psychology of Everyday Things*. USA: Basic Books
- Norman, D. (2010): *Living with Complexity*. MIT Press
- Simon (1969): *The Sciences of the Artificial*. MIT Press
- Sørensen, C. (2011): *Enterprise Mobility*. Palgrave
- Suchman, L. A. (2006): *Human and Machine Reconfigurations*. Cambridge University Press
- Tiwana, A. (2014): *Platform Ecosystems*
- Van De Ven, A. H., D. Polley, R. Garud, & S. Venkataraman (2008): *The Innovation Journey*. Oxford University Press
- Weinberger, D. (2008): *Everything Is Miscellaneous: The Power of the New Digital Disorder*. Henry Holt
- Weizenbaum, J. (1976): *Computer Power and Human Reason*. Penguin Books
- Yates, J. (1989): *Control through Communication*. Johns Hopkins University Press
- Zittrain, J. (2008): *The Future of the Internet*. Allen Lane
- Zuboff, S. (1987): *In the Age of the Smart Machine*. Basic Books
- Zuboff, S. & J. Maxmin (2002): *The Support Economy*. Penguin.