

## **THE INFORMATION INFRASTRUCTURE**

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## **What are universities for?**

- ☐ Create knowledge
- ☐ Care for knowledge
- ☐ Pass that knowledge to society
  - Know-how: educated people
  - Knowledge itself: usable and re-usable by various constituencies in society

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## **Daniel Coit Gilman**

**First President, Johns Hopkins University**

It is one of the noblest duties of a university to advance knowledge and to diffuse it, not merely among those who can attend the daily lectures, but far and wide

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## **Traditional values**

- ☐ Enabling and encouraging intellectual endeavour
- ☐ Scholarship for its own worth
- ☐ Collaborative spirit in the furtherance of society's interests and aims
- ☐ Collegiate view of the academic community worldwide

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## The knowledge commons

- ☐ Knowledge created in the academy was disseminated as effectively as possible by scholarly societies and university presses
- ☐ Base values:
  - Collaboration and cooperation
  - Sharing
  - Societal benefit

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## The last few decades

- ☐ Bayh-Dole, 1980
- ☐ Governments requiring universities to exploit IP
- ☐ Encouraged an attitude of risk-taking (which is not a core value of the academy)
- ☐ Fostered a spirit of competition between academic institutions (a serious one)
- ☐ Funding from society "linked to strategic priorities and specific outcomes rather than philanthropy" (Wellings)
- ☐ Loss of the public service model
- ☐ "Lofty ideal became lowly ambition" (Macdonald)
- ☐ Secrecy transcended sharing
- ☐ The prize: only 167 of 27,322 patents held by 192 public institutions in the US have made over \$1 million
- ☐ The price: compromise of the commons

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## 'The tragedy of the anti-commons'\*

- ☐ Dissemination largely relinquished to commercial publishers (N.B. are they entrepreneurial and risk-taking?)
- ☐ Even academy publishers are now largely 'commercial'
- ☐ Values: Commons became ownership
- ☐ Ownership is outside the academy
- ☐ Permissions, rights, restrictions....
- ☐ Compromising research efficacy
- ☐ Diminishing of the public good

\*Armbruster

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## The long walk back

- ☐ Revival of traditional thinking
- ☐ The Web: enabling openness in all its manifestations
- ☐ Vision of increased openness: access, science, innovation, learning, licensing, data, source, notebooks, knowledge
- ☐ Global knowledge creation and transfer environment

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### Three topics

- ☐ Open Access and knowledge sharing
- ☐ Ownership of knowledge
- ☐ Joining things up

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### Open Access and knowledge sharing

- ☐ 15 years of progress
- ☐ Repositories: c1700
- ☐ OA journals: c5000, with:
  - ambitious programmes (PLoS)
  - programmes to demonstrate that the 'author pays' model can become mainstream (BMC, Hindawi)
  - increasingly, from campus
- ☐ Policies
- ☐ Progressive thinking for the furtherance of research and learning

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### Drivers

- ☐ Research itself is changing:
  - Bigger
  - Collaborative
  - Boundary-less
  - Interdisciplinary
  - e-mediated
- ☐ Requires new behaviours
  - Research methods
  - Dissemination
- ☐ Requires new tools to optimise these new things (including Web 2.0 tools)
- ☐ Netgen (Digital Natives): think and behave differently
- ☐ Universities need new methods and metrics for assessment
- ☐ Universities under pressure to (re)appear in the public space

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### Governmental demands

- ☐ European Commission: "...ensure that knowledge transfer forms part of the strategic mission of the institution"
- ☐ Wellings Report (UK): "Universities should be able to demonstrate how they go about maximising the overall impact of their research"

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## Institutional responses

- ▣ From-campus dissemination ('publishing'):
  - Libraries (librarians, publishers)
  - Institutional repository (ies)
  - University presses
  - Academic unit publishing (often, now, OAJs)
  - Offices of Scholarly Communication
- ▣ There is more to do

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## Digital repositories

- ▣ Repositories, increasingly interoperable, deliver:
  - Open Education programmes ('The Edgeless University')
  - Outreach to traditional and new communities:
    - ▣ Local, regional, national, international:
      - industrial
      - commercial
      - professional
      - practitioner sectors
      - 'lay' public (Galaxy Zoo, Einstein@home)

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## Joining-up

- ▣ The Grid
- ▣ The Web
- ▣ Formal networking systems
- ▣ Campus profiling systems
  - VIVO
- ▣ Larger domain networking systems
  - Academia.edu
  - Informal networks
- ▣ The academy does not have control of much of this now, and may have even less in future, and does that matter?
- ▣ Campuses have much work to do to join things up locally (web pages; IR/CRIS; IR/web pages/)

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## Knowledge ownership as a barrier

- ▣ Access and sharing versus toll barriers and a bias towards secrecy and withholding
- ▣ The bulk of last century's knowledge is locked behind proprietary system toll barriers
- ▣ Attitudes, but these change (Digital Natives)
- ▣ Copyright ( a worrying issue in US and Europe)

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### **Copyright**

- ▣ Effect upon knowledge dissemination (in obvious ways, and less obvious)
- ▣ And knowledge creation
- ▣ And teaching
- ▣ Skewing research and teaching
- ▣ “It is time to recalibrate IP rules for the digital age.”
- ▣ US Committee for Economic Development: “When we find UPs using copyright protection to prevent dissemination ... it is time to step back and revisit not only the specific applications of the rules, but the rules themselves”
- ▣ Copyright and licensing policies and practices that hinder – or help

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### **Thank you for listening**

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