Paradigm Shifts

Aligning American Higher Eduation with National Priorities

Inputs

Students (17 M)
  "traditional"
  adult
  international
Clients
  patients
  government
  corporate
  society
Financial ($330 B)
  Private ($180 B)
  States ($67 B)
  Feds
    Fin Aid ($60 B)
    R&D ($21 B)
  Health Care
  Auxiliary Services

American Higher Education System

Community Colleges (1,086)
Regional 4-y Universities (695)
Independent Colleges (730)
Doctoral Universities (184)
For Profit Colleges (322)
Online Universities (230)
Trade Schools (530)
Corporate Training Programs
Open Universities (100)
Global Universities (10)

Research Universities (94)

Outputs

Degrees:
  AA, BA, PhD
  Professional
  Certified Skills
Private Benefits
  Career/profession
  Earning capacity
  Quality of life
  Socialization
  "Liberal education"
  Brand name
Public Goods
  Workforce quality
  R&D, innovation
  Cultural heritage
  Citizenship, values
  Leadership
  Challenging norms
  Economic prosperity
  Public health
  National security

Tools for Achieving Objectives

Public Policy

Regulation
  Fin Aid, Accred
Investment
  States, Feds
Incentives
  R&D, Matches

Market Forces

Finances
  Public, Gifts, Cap Mkt
Students
  Tuition, Quality, Brand
Reputation

Concerns

"Flat World Themes"
Quality
Access
Cost, Affordability
Accountability
Lack of innovation
Private benefit or
  Public Good?

Recommendations

1. Use public-private partnerships and market forces.
   to drive world-class quality in higher education.
2. Stimulate and support innovation.
3. Restructure public subsidies to enable access.
4. Achieve better coordination within and beyond higher ed.
5. Enhance federal support of R&D and graduate ed.
6. Commit nation to universal access to lifelong education.
7. Restore public trust and confidence necessary for
   American higher education to serve its public purpose.

Objectives

World-class quality
  at all levels
Access independent of
  socioeconomic status
World's leading research U
Innovative, nimble, efficient,
  responsive, accountable
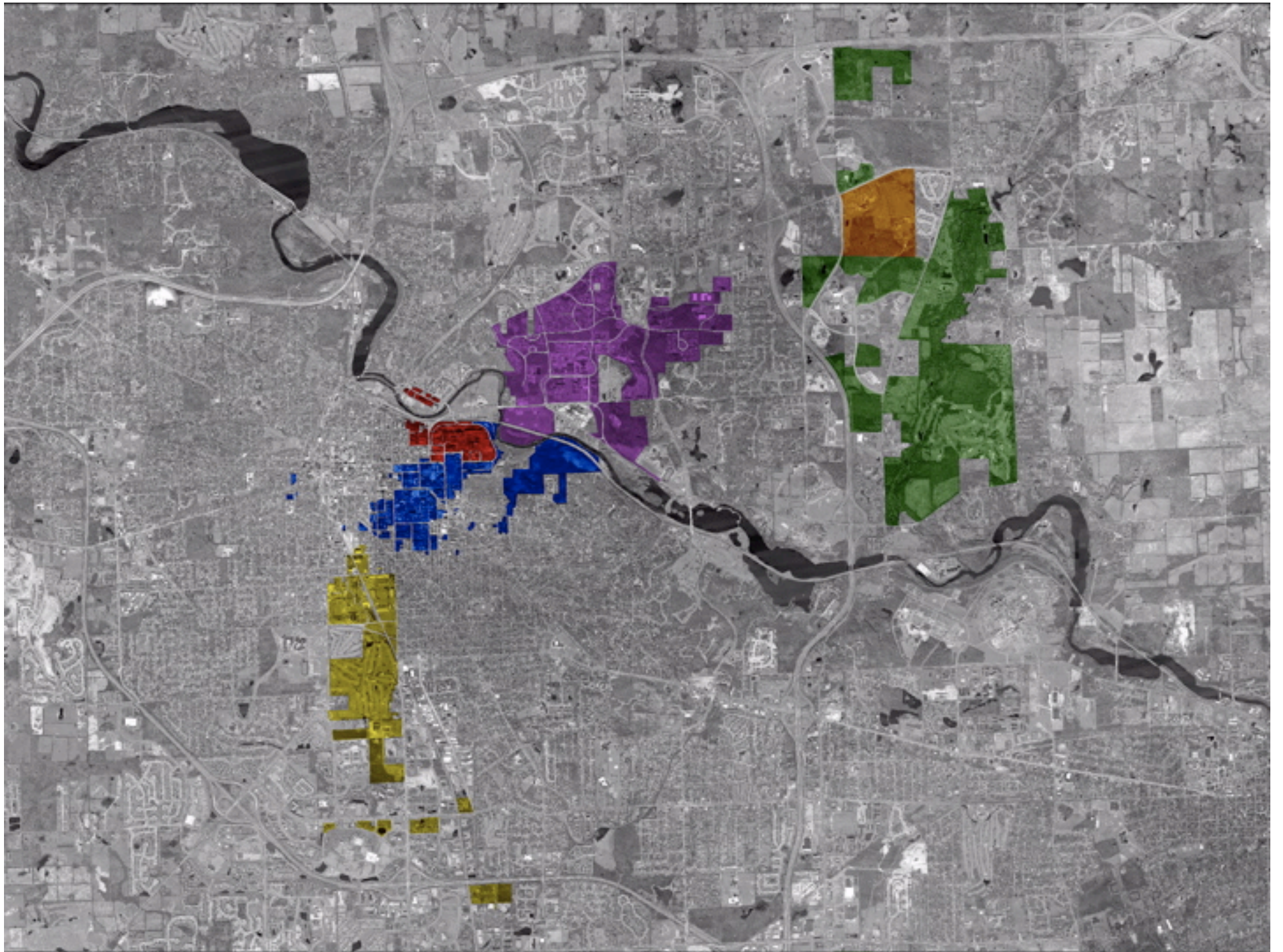University access to
  lifelong learning

A TEST OF LEADERSHIP
Charting the Future of U.S. Higher Education

Pre-Publication Copy September 2006

A Report of the Commission Appointed by
Secretary of Education Margaret Spellings

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U.S. Department of Education
Promoting educational excellence for all Americans.

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- No Child Left Behind
- American Competitiveness
- Summer Workshops for Teachers
- Pandemic Flu Preparedness

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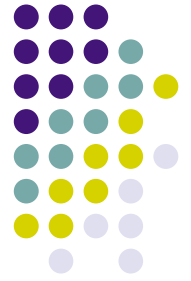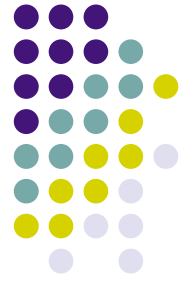
Charge

- To determine the higher education needs of the nation both for today and in the future.

- To assess the degree to which the current U.S. higher education enterprise is capable of meeting these needs.

- To suggest implementation strategies for better aligning higher education with the needs of the nation.
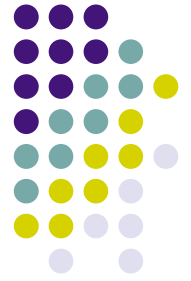
Concerns

- Changing national needs
- Access
- Affordability
- Accountability

The Changing Needs of the Nation

"The flattening of the world is moving ahead apace, and nothing is going to stop it. What can happen is a decline in our standard of living if more Americans are not empowered and educated to participate in a world where all the knowledge centers are being connection. We have within our society all the ingredients for American individuals to thrive in such a world, but if we squander these ingredients, we will stagnate." (Thomas Friedman, 2005)

Access

- There is evidence that both the access to and the distribution of students within American higher education are becoming alarmingly stratified based upon economic status, race, and ethnicity.

- Only 8% of the bottom quartile will graduate from a four-year institution, compared to 75% of the top quartile.

- While there are important actions that can be taken both by colleges and universities and by their patrons (state and federal government, private support) to improve access at the margin, major gains are not likely without a sustained improvement in secondary education.

Affordability

- The rapid increase in the price of a college education, driven in part by cost shifting from tax support to tuition in public institutions, by inefficiency and stagnant productivity gains, and by unbridled competition for the best students, faculty, resources, and reputations, is undermining public confidence in higher education.

- Do current financial aid programs conducted by the federal government, the states, and individual institutions adequately address the goals of increased access by those students with need, increased retention or graduation, and reduced debt burdens that might otherwise prevent lower-income students from pursuing low-paying and socially beneficial areas?

Accountability

- The inadequate performance of much of the higher education enterprise as measured by graduation rates, time to degree, learning outcomes, and even literacy.

- The limited capacity of postsecondary education to innovate and adapt to changing needs and conditions.

- The lack of transparency in providing public information about costs, prices, and value.

- The reluctance of many higher education institutions to recognize their public purpose and respond to the changing needs of the nation.

Findings: The Good News

Whether America's colleges and universities are measured by their sheer number and variety, by the increasingly open access so many citizens enjoy to their campuses, by their crucial role in advancing the frontiers of knowledge through research discoveries, or by the new forms of teaching and learning that they have pioneered to meet students' changing needs, these postsecondary institutions have accomplished much of which they and the nation can be proud.

Findings: The Bad News

Despite these achievements, however, the Commission believes U.S. higher education needs to improve in dramatic ways.Our year-long examination of the challenges facing higher education has brought us to the uneasy conclusion that the sector's past attainments have led our nation to unwarranted complacency about its future.

Too many Americans just aren't getting the education that they need – and that they deserve.

More Bad News

American higher education has become what, in the business world, would be called a mature enterprise: increasingly risk-averse, at times self-satisfied, and unduly expensive.

It is an enterprise that has yet to address the fundamental issues of how academic programs and institutions must be transformed to serve the changing educational needs of a knowledge economy. It has yet to successfully confront the impact of globalization, rapidly evolving technologies, an increasingly diverse and aging population, and an evolving marketplace characterized by new needs and new paradigms.

Recommendation 1

Removing the Barriers to Access and Success:

Every student in the nation should have the opportunity to pursue postsecondary education. We recommend, therefore, that the U.S. commit to an unprecedented effort to expand higher education access and success by improving student preparation and persistence, addressing non-academic barriers and providing significant increases in aid to low-income students.
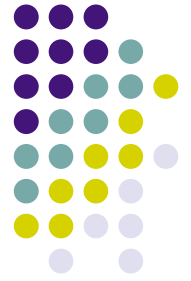
Recommendation 2

Restructuring Public Support:

To address the escalating cost of a college education and the fiscal realities affecting government's ability to finance higher education in the long run, we recommend that the entire student financial aid system be restructured and incentives put in place to improve the measurement and management of costs institutional productivity.

Recommendation 3

Transparency, Accountability, and Public Purpose:

To meet the challenges of the 21st century, higher education must change from a system primarily based on reputation to one based on performance. We urge the creation of a robust culture of accountability and transparency throughout higher education. Every one of our goals, from improving access and affordability to enhancing quality and innovation, will be more easily achieved if higher education embraces and implements serious accountability measures.

Recommendation 4

Investing in Innovation:

With too few exceptions, higher education has yet to address the fundamental issues of how academic programs and institutions must be transformed to serve the changing needs of a knowledge economy. We recommend that America's colleges and universities embrace a culture of continuous innovation and quality improvement by developing new pedagogies, curricula, and technologies to improve learning, particularly in the area of science and mathematical literacy.

Recommendation 5

Lifelong Learning:

America must ensure that our citizens have access to high quality and affordable educational, learning, and training opportunities throughout their lives. We recommend the development of a national strategy for lifelong learning that helps all citizens understand the importance of preparing for and participating in higher education throughout their lives.

Recommendation 6

Responding to the Imperatives of a Global, Knowledge Economy:

The United States must ensure the capacity of its universities to achieve global leadership in key strategic areas such as science, engineering, medicine, and other knowledge-intensive professions. We recommend increased federal investment in areas critical to our nation's global competitiveness and a renewed commitment to attract the best and brightest minds from across the nation and around the world to lead the next wave of American innovation.

Note:

- No standardized testing…
- No tuition price fixing…
- No national (federal) accreditation…
- No "No Child Left Behind" or "A Nation at Risk"…
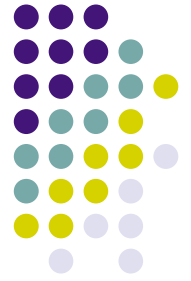- No federalization of American higher education!

The Economist: "The strength of the American higher education system is that it has no system!"
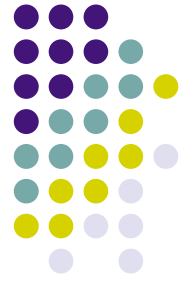
Possible "blockbusters"

- A major engagement of higher education with primary and secondary education.

- A restructuring of public support for higher education that places priority on need-based financial aid.

- A new level of transparency and disclosure (e.g., cost structures, educational effectiveness) to earn public trust and confidence.

- A much higher priority given to experimentation and innovation.

- A call to establish livelong post-secondary education as a "civil right" of all Americans.

- Meeting the needs of an innovation-driven nation in a global, knowledge-economy.

Entirely New Paradigms

- Importance of lifelong learning
- Emergence of "universities of and in the world"
- The "meta" university
- Universal access to knowledge and learning

Lifelong Learning

The nation would accept its responsibility as a democratic society in an ever more competitive global, knowledge driven economy to provide all of its citizens with the educational, learning, and training opportunities they need, throughout their lives, whenever, wherever, and however they need it, at high quality and affordable costs, thereby enabling both individuals and the nation itself to prosper.

Why?	Lengthening lifespans and careers (+ 20-30 y?)
	Increasing pace of new knowledge
	Challenges of global, knowledge economy

Note:
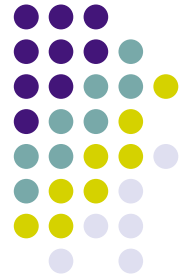
Of course, establishing as a national goal the universal access to lifelong learning would require not only a very considerable transformation and expansion of the existing postsecondary education enterprise, but it would also require entirely new paradigms for the conduct, organization, financing, leadership, and governance of higher education…

The Global University

Both mature and developing nations are making major investments in building the knowledge infrastructure–schools, universities, research institutes, high-tech industry, cyberinfrastructure, public policies and programs–necessary to achieve prosperity and security in the knowledge economy.

In parallel with these trends, there is a strong sense that higher education is also in the early stages of globalization, both through the rapid growth in international partnerships among universities, and through the emergence of truly global universities that intend to compete in the global marketplace for students, faculty, and resources.

Universities of the world…
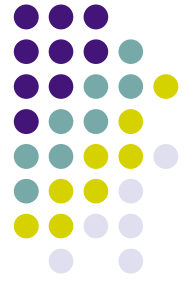## and in the world

We might even see the emergence of "universities of and in the world–institutions that not only address the opportunities provided by a global marketplace but define their public purpose beyond institutional, regional, or national needs and to encompass global imperatives such as global sustainability, world health, wealth disparities and poverty, and international development.

Early efforts?

- Open University (U.K.), 21st Century School
- For-Profits (U. Phoenix, Laureate (Sylvan), etc.)
- EU Integration (Bologna, Lisbon)
- Consortia (Universitas 21, Nagoya, Glion)
- New Paradigms?

The "Meta" University

Perhaps the most interesting activities in higher education today involve an extension of the philosophy of open source software developing to open up opportunities for learning and scholarship to the world by putting previously restricted knowledge and learning opportunities into the public domain and inviting others to join both in its use and development.

The Open University
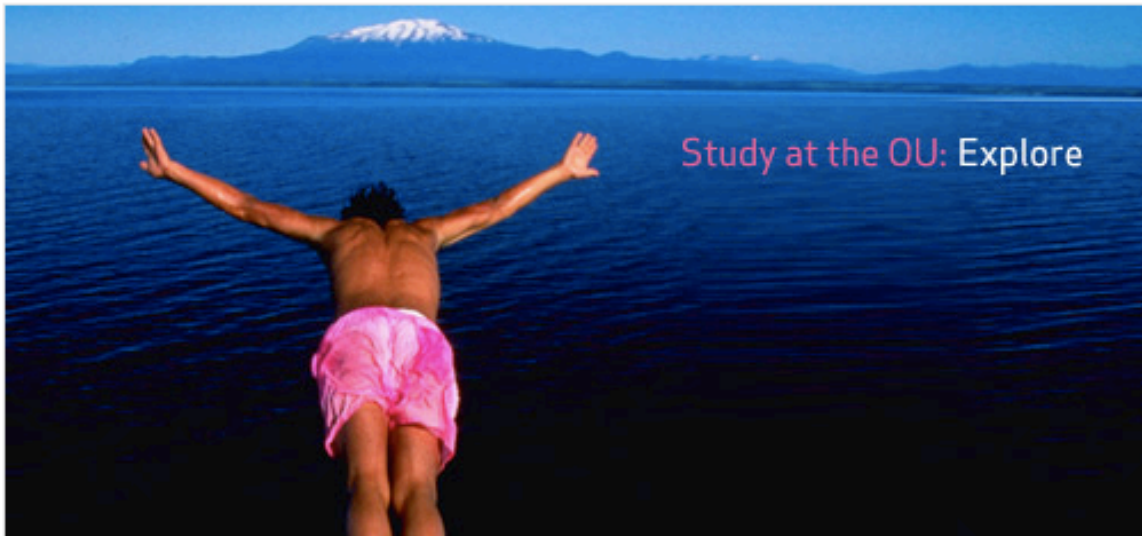
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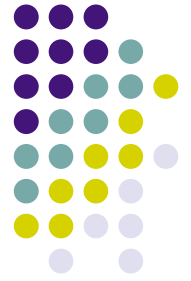
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MIT's OpenCourseWare Initiative

- MIT has placed the digit assets for essentially its entire curriculum in the public domain (on the Internet)–roughly 2,000 courses accessed last year by 3 million students.

- Over 100 universities in the U.S. and abroad are now committed to joining this effort (including a major effort by the British Open University).

- (NOTE: MIT received $20 million of grants to do this. A new approach is needed: the Sakai Project)

Sakai

Sakai: Collaboration and Learning Environment for Education
Free to Use, Free to Develop, Freedom for Education

SEARCH

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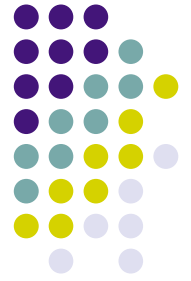Unicon's Sakai v2.2 Test Drive ◐   rSmart's Sakai CLE ◐

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The Sakai Project

- This is an effort by several universities (Michigan, MIT, Indiana, Stanford, Oxford) and corporations (IBM, Apple, Cisco, and Unisys) to develop open-source middleware to support the instructional and scholarly activities of higher education.

- Several hundred colleges and universities are now moving to the Sakai platform, including all of our students (40,000), instructional, and many of our scholarly activities at Michigan.

- The Sakai team is now developing the open-source middleware to support the OpenCourseWare initiative so that it can rapidly propagate on a global level.

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The Google Project

- In late 2004 Michigan signed a contract to have its entire library (7.8 million volumes) scanned by Google and made available for online search engines.

- It has been joined in this effort by several of the world's leading libraries (Stanford, Harvard, Oxford, the New York Public Library, and the Universities of California, Wisconsin, and Madrid…and continuing to grow).

- Note that these collections are estimated to span roughly half of the world's books in over 400 languages.

- (Of course there are a few copyright "technicalities", but at Michigan we expect to complete our share within five years.)

So what? Kevin Kelly suggests

- "When Google announced in December 2004 that it would digitally scan the books of five major research libraries to make their contents searchable, the promise of a universal library (…of Alexandra…) was resurrected. Might the long-heralded great library of all knowledge really be within our grasp."

- "We can provide all the works of humankind to all the people of the world. It will be an achievement remembered for all time, like putting a man on the moon. And unlike the libraries of old, which were restricted to the elite, this library would be truly democratic, offering every book to every person."

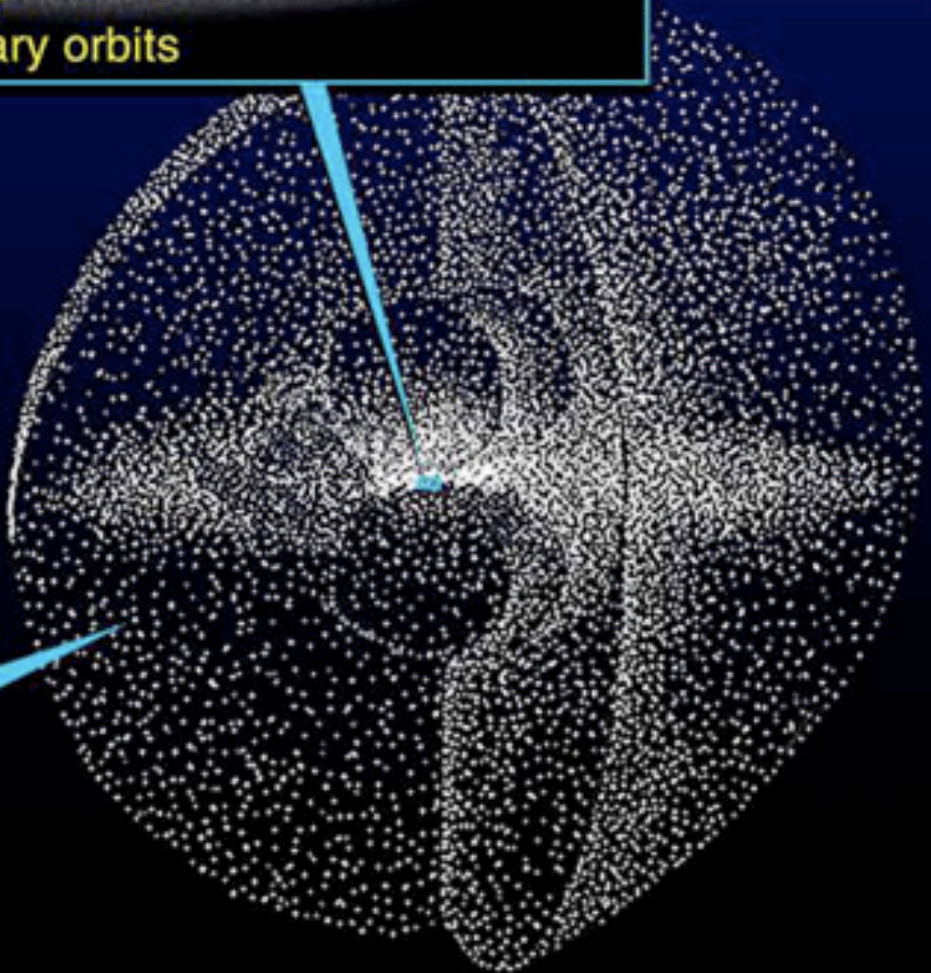Orbit of Binary
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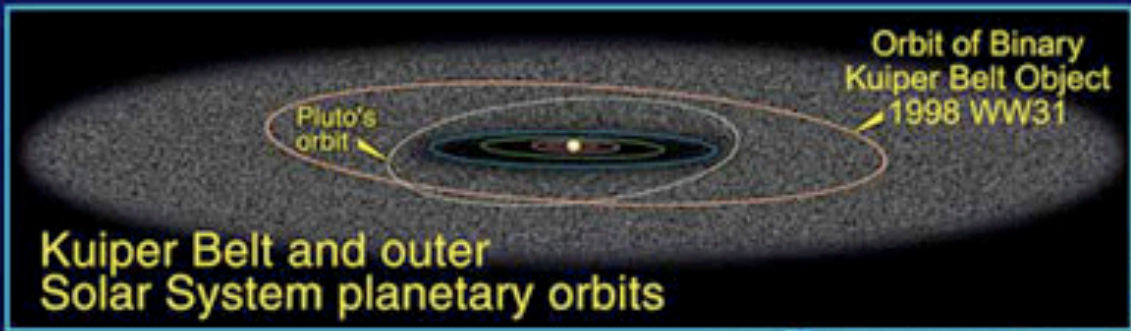
Kuiper Belt and outer
Solar System planetary orbits

The Oort Cloud
(comprising many
billions of comets)

Oort Cloud cutaway
drawing adapted from
Donald K. Yeoman's
illustraton (NASA, JPL)

Kuiper_oort.jpg (71KB, MIME type: image/jpeg)

Artist's rendering of the Kuiper Belt and Oort Cloud.

Imagine if we could put all of this together:

- Internet-based access to all recorded (and then digitized) human knowledge augmented by powerful search engines.
- A knowledge and learning scaffolding made available through open paradigms
  - Open-source middleware (Sakai)
  - OpenCourseWare (MIT)
  - New, collaborative tools (e.g., Wikipedia)
  - Open Universities
- Ubiquitous access to cyberstructure
  - E.g., Negroponte's $100 laptop…

MIT Media Laboratory

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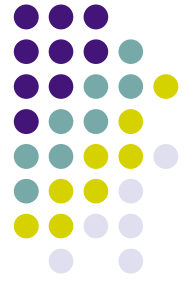
Visit the **[$100 Laptop Website](#)** for the latest information.

Imagine further

- Imagine a time in the near future where anyone with even a modest Internet connection ($100) has access to all of the recorded knowledge of our civilization along with ubiquitous learning opportunities.

- Imagine further the linking together of a substantial part of the world's population with limitless access to knowledge and learning opportunities enabled by rapidly evolving cyberinfrastructure increasing a thousand-fold in power every decade.

The Future of the University

- While science fiction continues to entertain us with the possible emergence of superhuman artificial intelligence, of far more likelihood and interest in my view is the emergence of a new form of collective human intelligence, as billions of world citizens interact together, unconstrained by today's monopolies on knowledge or learning opportunities.

- Perhaps this, then, is the most exciting vision for the future of the university–no longer constrained by space, time, monopoly, or archaic laws–but rather unleashed by cyberinfrastructure to empower the emergence of a new global civilization of humankind.