Pivot Points:
Setting the Scenario

Sandra Braman

2005 Summer Symposium for Higher Education IT Executives

July 14, 2005
We all build scenarios, every day

- a quick shot at a long historical view
- the shape of the curve towards the future
- the pivot points
- the tensions
- the opportunities
The future is not like the past

- How do we produce knowledge?
- Who produces knowledge?
- What difference does IT make?
How do we produce knowledge?

• Plato – we think about things
• Hume – we kick rocks
• Locke – we tell each other what we find when we kick rocks
• Leibniz – we describe the rocks we’ve kicked mathematically
• 19th c -- we systematize which rocks we kick, and how
• 20th c -- we set up experimental conditions under which to kick rocks
• 21st c -- we mathematically manipulate vast quantities of data about what we’ve learned from kicking rocks
In other words . . .

• We’ve gone from producing knowledge
  – by using *theory*
  – to using *theory* + *research*
  – to using *theory* + *research* + *computation*
Who produces knowledge?

• Individuals in conversation
  – eg, Plato + Socrates

• Individual scholars comparing written records of many others’ work
  – after Gutenberg

• Individuals systematizing written knowledge
  – charts, tables, & other info techs
• Teams working together in laboratories
  – + need to coordinate activities
• Teams working with massive amounts of data from iterations of studies
  – + need for computation
• Teams working together in labs across institutions (and national boundaries)
  – + need for communication
In other words ...

• We’ve gone from
  – working alone with only our own data
  – to working alone with everyone’s data
  – to working in teams in one place with single study data
  – to working in teams in one place with data from many studies
  – to working in distributed teams with massive data sets
What differences does IT make?

• What we know is based on
  – the symbolic expression of our ideas
    • math, writing, images
  – collection of data from the environment
    • instrumentation
  – discussion of ideas and data
    • communication
  – analysis of data
    • computation
• Each of these elements of knowledge production requires IT
• & with each technological innovation, we have new ways of doing what we do
• Therefore
  – *innovations in IT = new modes of knowledge production*
The future is like the past

- Socrates – only discuss ideas orally, tailoring messages to a known audience
- Plato – use writing, to disseminate ideas more widely
- Lesson for today – With each new tech,
  - new partners
  - new ways of relating to our partners
  - new ways of doing things
3 scenarios for IT higher ed futures

• IT units disappear; functions merge with daily operations of other units
• IT units are “the cable guys”; provide support in reactive mode
• IT units are key partners in strategic planning for research mission
The pivot points

• Which scenario? Depends on
  – IT organizational structure
  – Relationships with faculty
  – Relationships with other institutional units
  – “Need to know”
IT organizational structure

• Functional shift
  – from administration + teaching support
  – to administration, teaching support + research

• Multiple possible ways of structuring
  – current ECAR study will give picture of options

• Merging IT & research functions through collaborations between IT staff & research personnel beneficial
Relationships with faculty

• Be there at the point of hire - & follow through
• Sustain informal relationships
• Build formal networks (platform-, software-, & research problem-specific)
• Collaborate in grant-writing
• Facilitate collaborative infrastructure building
• Support intra- & interinstitutional research networks
• *Inspire new research by supporting software*
Relationships with other units

- Library (eg, data archives)
- Graduate school (eg, strategic planning)
- Grants & development (eg, joint grants)
- Deans & personnel (eg, re hires)
- Pedagogy university-wide (eg, support for increasingly computation-intense undergraduate teaching)
“Need to know”

• Research trends
• The law
  – within the US
  – in other countries
• New funding options
The tensions, I

- Traditional constraining forces include
  - Need for data privacy
  - Intrairstitutional competition for funds
  - Interinstitutional competition for funds
  - Cultural habits
  - Generational shifts
The tensions, II

• Contemporary constraining forces include:
  – National security – access to information
  – National security – diversion of research budgets
  – National security – diversion of IT funds
  – National security – brain drain
  – National security – intimidation of researchers
The opportunities

• Research is increasingly mission-critical
• More than ever, research is IT dependent
• Proactive IT units will
  – know their researchers, & their research
  – stimulate new work by offering new tools
  – play a leadership role in setting & fulfilling institutional strategy