Taxonomy for MilProj—DRAFT 1
June 27, 2002

Research University in the 21st Century

A. Extra-institutional
1. Technological landscape
a. Advancements
a. Hardware
i. Processor speeds
ii. Storage capacity
iii. Screen displays
iv. Portability
v. Supercomputers
vi. Robotics
vii. Adaptive technologies
b. Software
i. Databases/data processing
ii. Graphical user interfaces
iii. Agents
iv. Theorem-proving software
c. Telecommunication networks
i. Wireless technology
ii. Fiber optics
iii. "Global communications skin"
1. Advanced, distributed infrastructures
2. Multimedia networks
b. Applications
a. Learning & research technologies
b. Virtual/simulated environments
i. Electronic conferencing
1. Telepresence
ii. Collaboratories
iii. Virtual Reality (VR)
c. Cyberinfrastructure initiative

B. Inter-institutional
1. Industry
a. Economic forces
i. Knowledge driven economy
a. Increased value of intellectual capital
i. Knowledge work/knowledge workers
j. Highly competitive educational marketplace
a. Business/university partnerships
b. For-profit educational providers
c. Not-for-profit educational providers
k. Ecommerce
a. B2B commerce
2. Government
a. Government/university partnerships
b. Egovernment

C. Intra-institutional
1. Core Functions
a. Teaching
i. New forms of pedagogy
1. Lerner-centered

a. Tailored
i. Control of learning environment
ii. Lifetime skills
b. Democratizing influence of technology
2. Instructional innovations
a. Content development
b. Courseware development
c. Assessment tools
d. Student guidance
3. New forms of delivery
a. Technological augmentation of traditional classroom
b. Distance education
i. Online courses
ii. Course management tools
c. Outsourced services
4. New learning environments

b. Research
i. Increased computing power
1. Advances in complex data analysis
ii. Increased information access
1. Digital libraries
a. Preservation and access to original source material
iii. Interdisciplinary cooperation
1. Collaboration/teamwork
2. Digital devices as primary interface with other people
iv. Commercialization of intellectual assets
v. Decoupling of research and education
vi. Prospects of future funding

c. Service & Outreach
i. Role of higher education in society
1. Preservation of important values of university
2. Generation of new knowledge
3. Constructive social criticism
4. Knowledge-based services
a. Technology transfer
b. Health care
ii. Fading boundaries between university and society
1. Extension of reach to traditionally underserved
iii. Economic development
1. Regional
2. National

2. Institutional Identity
a. Organization
i. Mission
1. Preservation of traditional values
a. Academic freedom
b. Rational spirit of inquiry
c. Liberal learning
ii. Personnel
1. Unbundling of faculty & students from university
a. Faculty
i. Faculty entrepreneurship
1. Content ownership
a. Mindshare/learningware
2. Free agency
3. Risks to tenure
ii. Loss of traditional power
1. New student-faculty relationship
b. Students

i. Consumers of educational services
    1. Increasingly diverse
    2. Mobile
    3. Lifetime participants

iii. Disciplines
    1. Breakdown of disciplinary boundaries

b. Structure
    i. Erosion of constraints
        1. Temporal
            a. On-demand, anytime, anyplace academic schedule
        2. Physical
            a. Residential campuses
            b. Virtual campuses

c. Management
    i. Mergers/Acquisitions
        1. Alliances
            a. Convergence with knowledge-intensive companies
    ii. Competition
        1. For-profit educational companies
    iii. Role as Services Broker
    iv. Role as Services Supplier

d. Financing
    i. Need for new financial model
        1. Exploitation of markets for educational services
            a. "Global knowledge and learning industry"
        2. Resource management
            a. Human infrastructure
                i. Internal IT expertise
            b. Technology infrastructure
                i. Capital expenditure