



*Changing the societal "fabric" towards a new structure*  
(upper figure by R.E. Horn)

Converging Technologies for Improving Human Performance  
NANOTECHNOLOGY, BIOTECHNOLOGY, INFORMATION TECHNOLOGY AND  
COGNITIVE SCIENCE - NSF/DOC-sponsored report  
Edited by Mihail C. Roco and William Sims Bainbridge, National Science  
Foundation June 2002, Arlington, Virginia

**Table 2. Key visionary ideas and projects discussed in this report**

Theme	Key visionary ideas/projects
<b>A. Overall Potential of Converging Technologies</b>	NBIC strategy for technological and economical competitiveness
	New patterns for S&T, economy, and society
	Enhancing individual and group abilities, productivity, and learning
	Sustainable and “intelligent” environments
	Changing human activities towards the “innovation age”
<b>B. Expanding Human Cognition and Communication</b>	Human cognome project and cognitive evolution
	Brain-to-brain interactions and group communication
	Spatial cognition and visual language using converging technologies
	Enhanced tools for learning and creativity
	Predictive science of societal behavior
<b>C. Improving Human Health and Physical Capabilities</b>	Healthcare, body replacements, and physiological self-regulation
	Brain-machine interfaces and neuromorphing engineering
	Improving sensorial capacities and expanding functions
	Improving quality of life of disabled people
	Aging with dignity and life extension
<b>D. Enhancing Group and Societal Outcomes</b>	The Communicator: enhancing group interaction and creativity
	Cognitive engineering and enhancing productivity
	Revolutionary products, including “aircraft of the future”
	Networked society, with bio-inspired culture
<b>E. National Security</b>	Enhancing physical and mental capacity of a soldier
	Enhancing readiness and threat anticipation tools
	Globally linked detection devices
	Uninhabited combat vehicles
<b>F. Unifying Science and Education</b>	Unifying science from the nanoscale and integrative principles
	Cognitive, civic, and ethical changes in a networked society
	Breadth, depth, “trading zones,” and reshaping education at all levels
	Changing the human culture