



지식기반사회와 산업경쟁력

강 태 진

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강중국의 조건

강대국

- 경제력
 - 군사력
 - 정치력
- (패권국)

강중국

- 경제력
- 정치력
- 과학기술력

국민의 자질

- 창의력
- 개혁정신/모험정신
- 진취력
- 근로력
- 애국심/충성심

정치지도력

Industrial Strategy of Today

How to compete with world enterprises?

How to respond the society?

How to get out from slumping economy?

20C Mega Trend

Technology Revolution

Social Class Revolution

Feminine Revolution

Youth Revolution

21C Mega Trends

Slowness:

Safety
Well-being
Eco Blooming
Retro

Fastness:

Digital & Ubiquitous
Multitasking
Smarter

Humanized Technology

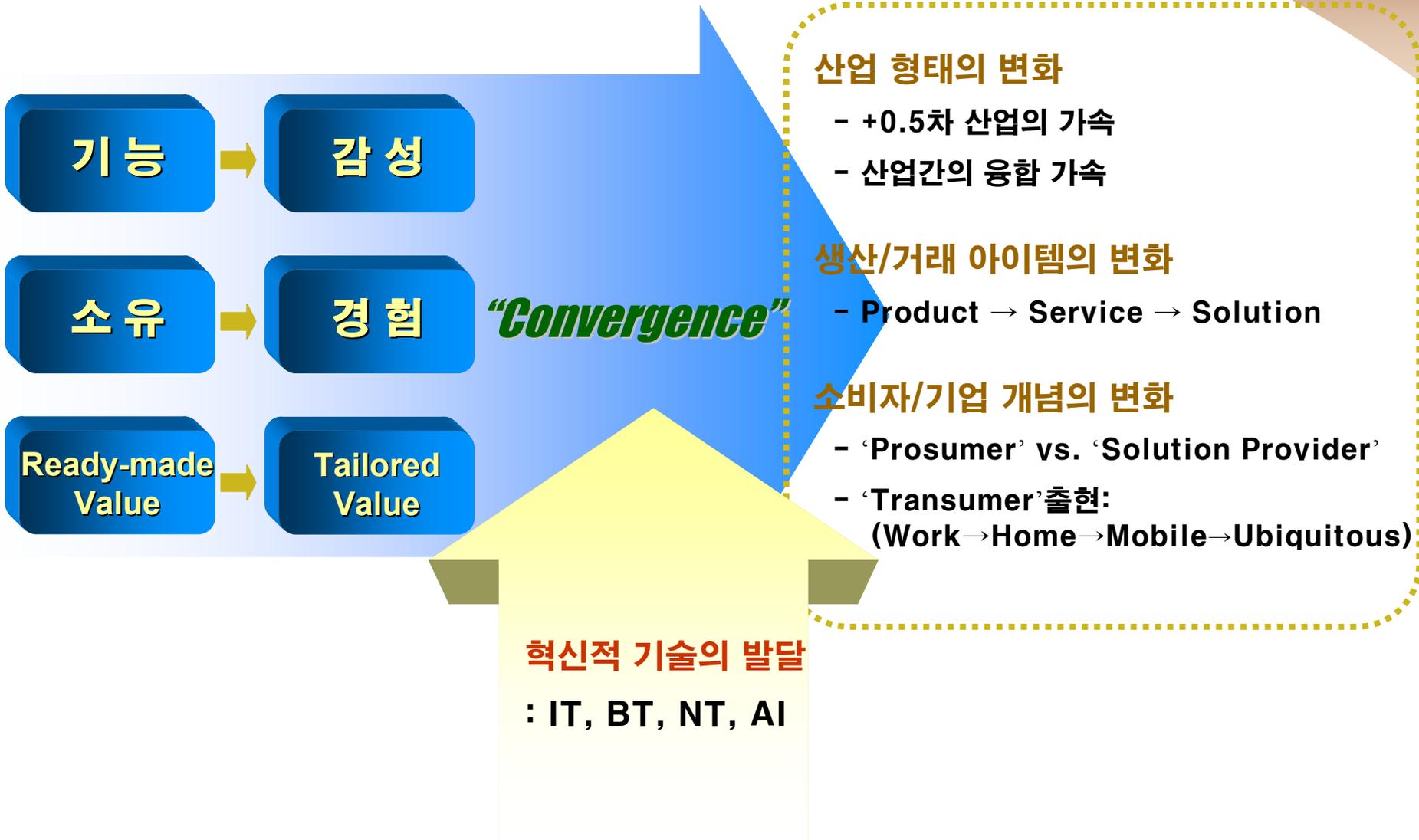
Community:

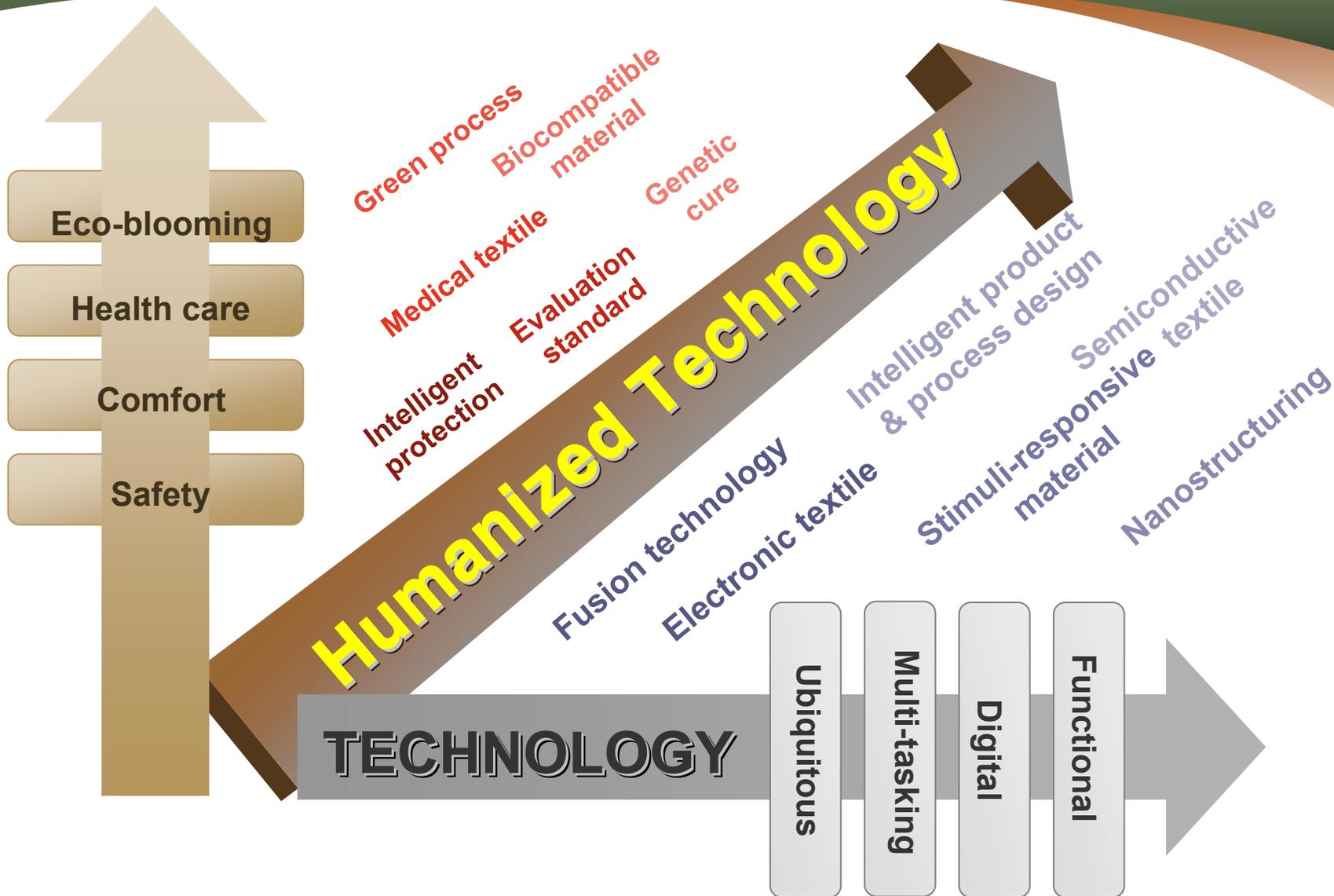
Cultural Authenticity
Globalization
Luxury

Identity:

Personalization
Uniqueness
Diverse Life Style
Entertainment

21C 산업 패러다임의 변화





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NOVEMBER 19, 2007

Musharraf's Law

How Pakistan's turmoil hurts the global war on terror



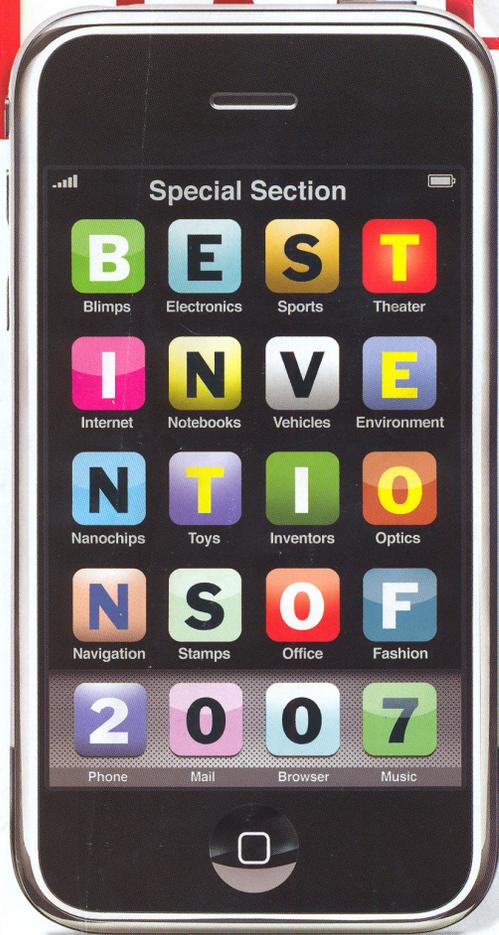
Citigroup: The Rise And Fall of A Prince

The Front Runner: Inside Hillary Clinton's Campaign

By Joe Klein



TIME



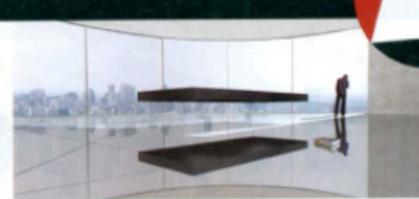
From the phone that has changed phones forever, to futuristic cars, to a dress that changes color with your mood, to a remote-controlled dragonfly—a dazzling display of ingenuity



Wearable Revolution

TIME best inventions 2006

YouTube tops our list. But the year also brought hypoallergenic cats, levitating beds, hug machines and more
PLUS Cool Technology



Need for Clothes that Communicate

- Blue-Jacking
- Pod-Casting
- Mo-Blogging
- Smart Mobs



The Media Lab, MIT



h2.o

new minds, new bodies, new identities





h2.o

new minds, new bodies, new identities



Neuro Prosthetic Devices

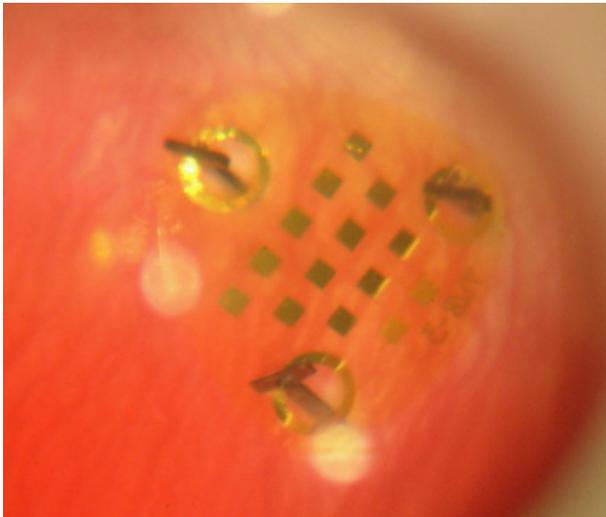
- ✓ Deep Brain Stimulation(DBS)
- ✓ 파킨스씨병 치료-재활



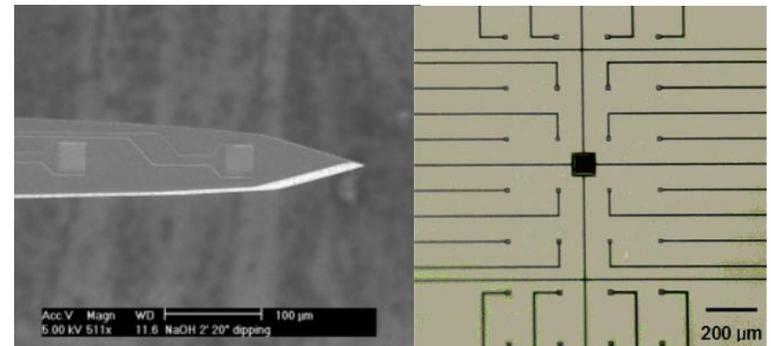
- ✓ Cochlear Implantation(인공와우)



- ✓ Retinal Implantation (인공망막)



- ✓ Neural Probe and MEA



Sense & Monitoring Systems

Warfighter physiological status monitor (WPSM) by *Foster-Miller*

- System platform of WPSM

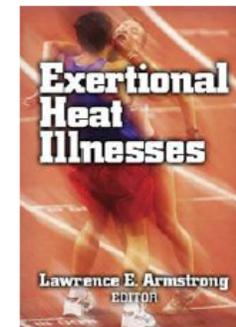
Electronics/Radio



Garment & E-textile Bus:
The Platform



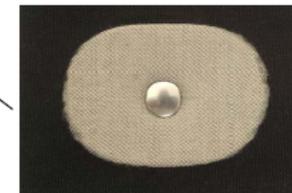
Algorithms



Interface/Display



Sensors

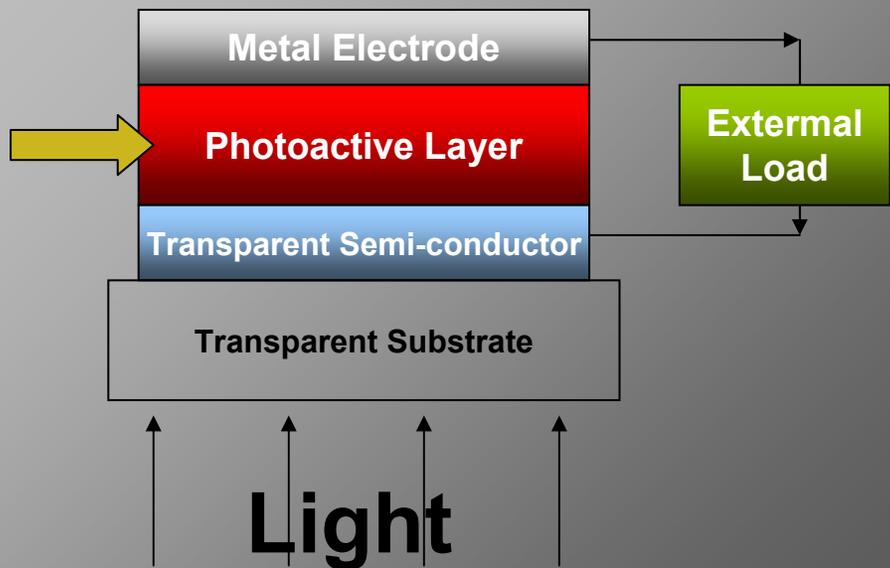


Foster-Miller
QinetiQ North America

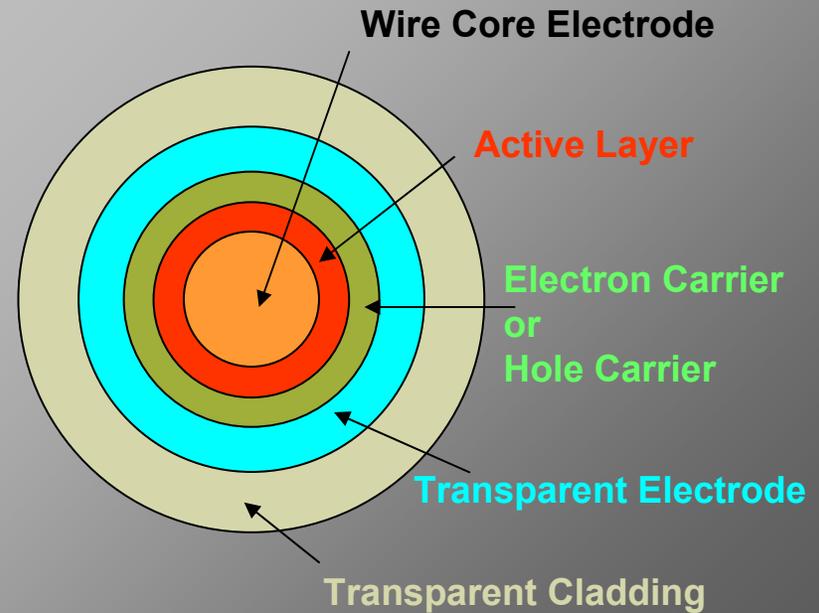
Photovoltaic Systems

Photovoltaic Fiber

Photovoltaic Cell



Photovoltaic Fiber



Photovoltaic Systems

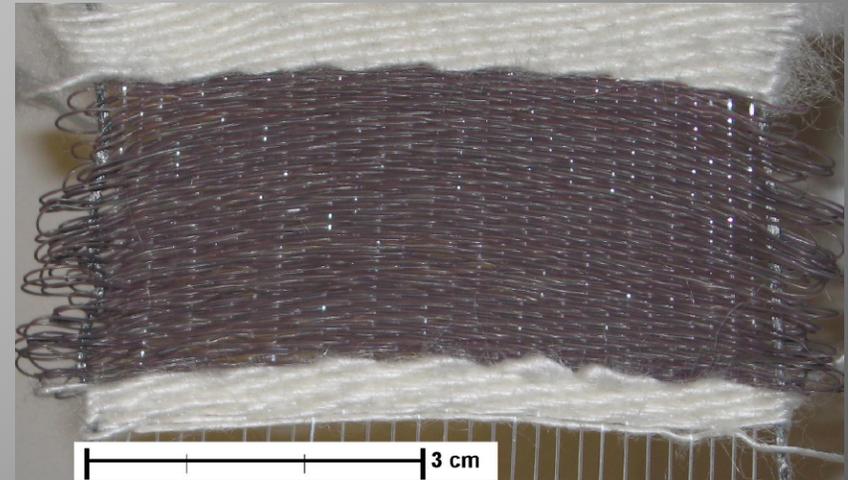
Photovoltaic Fiber Dye-sensitized Titania with liquid electrolyte

Complete Fiber



Titanium core, Dyed Titania, electrolyte counter electrode wire, photopolymer cladding

Woven PV Fiber



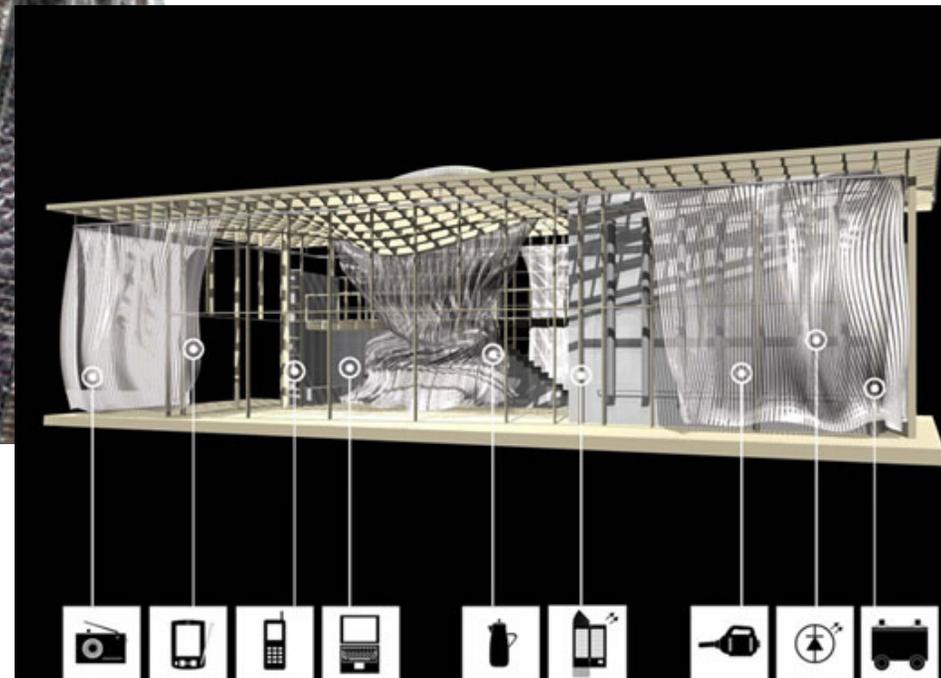
Photovoltaic Systems

Solar Textiles for Green-living



- Textile organic photovoltaic system
- Soft panel curtains can cover walls and roofs and produce Up to 16,000 W/h

Vitra Design Museum in Germany



지식기반산업

Knowledge-Based Industries

- ✓ 산업발전에 있어서 정보와 지식의 창출, 확산, 활용이 핵심적 역할을 수행하는 산업 (OECD)
- ✓ R&D활동에 종사하는 근로자의 비중이 해당산업평균보다 50%이상인 지식집약산업
- ✓ 전통적 생산요소보다 인간의 창의성에 기초를 둔 지식을 핵심적인 생산요소로 활용하는 산업이며, 인간의 지식과 지적 능력을 생산과정에 최대한 활용함으로써 기존 산업의 생산성 향상과 제품의 고부가가치화를 이루거나 신기술산업을 창출하거나 고부가가치의 지식서비스 그 자체를 제공하는 모든 산업

지식기반시대의 산업경쟁력

◆ 기술력

R&D is investment for survival.

◆ 인적자원의 질

Manage People not Project.

“Bet on people.”

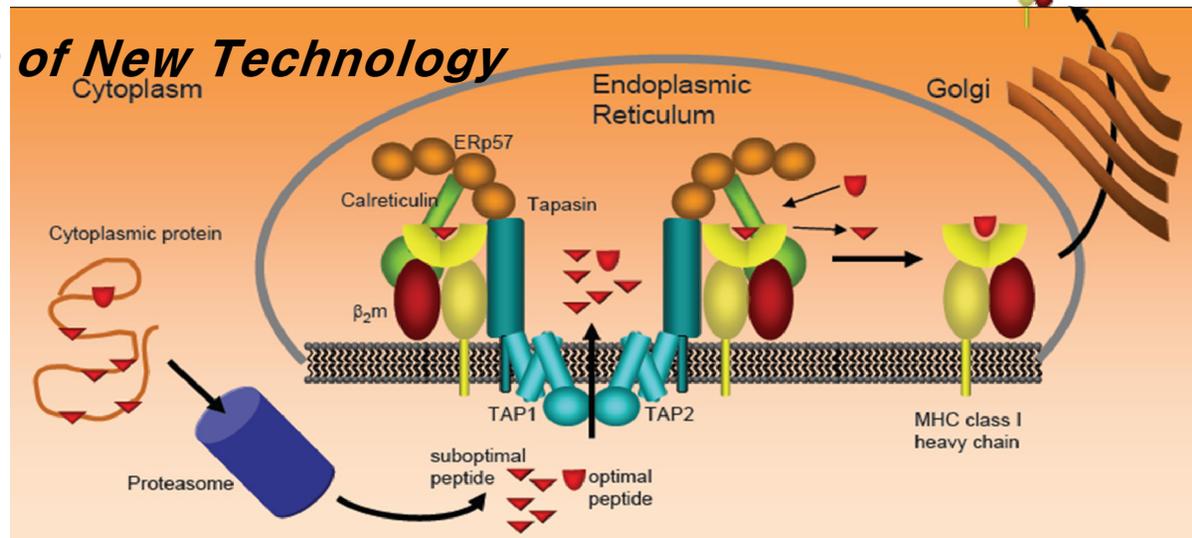
지식기반시대의 산업경쟁력

◆ 기술력 기반

- ✓ Thousands of years ago: **Experimental Science**
- ✓ Last few hundred years: **Theoretical Science**
- ✓ Last few decades: **Computational Science**
- ✓ Today: **e-Science** or **Data-centric Science**

Data → **Information** → **Knowledge**

Emergence of New Technology



◆ 인적자원의 질

지식기반시대의 산업경쟁력

◆ 기술력 기반

◆ 인적자원의 질

- ✓ 미국의 경우 기업이 시설투자를 10% 증액한 경우 생산성이 3.6% 향상되었으나, 교육훈련투자를 10% 증액한 경우 생산성이 8.4% 향상된 것으로 나타남 (21st Century Skills for 21st Century Jobs, '99)
- ✓ 생산성 증가 측면에서 시설투자 보다 인적자원 투자가 보다 효율적이라는 조사결과에서도 나타나듯이 지식기반 사회에서 양질의 인적 자원의 중요성이 자본기술 등 물적 요소를 능가함

지식기반사회와 대학

대학의 역할

- ◆ 지식기반경제를 발전시키는 과학적 발견의 중심
 - 적응성 / 지식 / 창의성 요구
- ◆ 국가경쟁력의 도구
 - 경쟁력을 확보 유지하는데 필요한 고급 숙련인력 양성, 연구 개발 혁신, 사회통합 촉진과 성장·분배 기능 담당
 - 중국은 대학을 경제성장 촉진수단으로 활용
- ◆ 지구촌의 통합 · 상호이해 · 지정학적 안정유지
 - 상품 · 서비스 · 정보 · 인력의 자유로운 이동



지식기반사회와 교육투자

◆ Public Investments

- 과학의 강점 덕분에 미국은 중요한 신기술의 상업화에서 세계를 주도
 - 60년대: Main Frame Computer
 - 80년대: IC circuit
 - 90년대: Internet

◆ Private Investments to forge new generations of engineers

- Lockheed-Martin Corp. : funding engineering courses
- Rolls-Royce PLC : funding high-school courses in topics such as engine propulsion
- Intel® Corp. : supporting curricula where engineering concepts are taught as early as elementary level
- Cisco Systems Inc. : offering information-technology certificate
- *Project Lead the Way* : engineering coursework development for pre-college students since 1997

Educating the Engineer of 2020

- **Technically Proficient**
- **Broadly Educated**
- **Think of Themselves as Global Citizens**
- **Can be Leaders in Business and Public Service**
- **Ethically Grounded**

Seoul National University

An aerial photograph of the Seoul National University campus, showing a large stadium in the center, surrounded by various university buildings and green spaces. The campus is nestled in a valley, with dense green mountains rising on all sides. In the far distance, a cityscape and more mountain ranges are visible under a clear blue sky.

감사합니다.