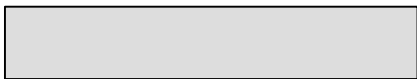


# IT : Gap

IT IT (Gap Analysis) IT \* \*\* \*\*\*



- I.
- II. IT
- III. IT
- IV. Gap IT
- V.

I.  
 “ (Technology is essential for long-term economic growth)” (Tassey, 1997)  
 (Mowery & Nelson, 1999; Freeman & Soete, 2000), 21  
 IT 가  
 가 .

\* IITA /  
 \*\* ETRI  
 \*\*\*

.....

IT (IT ) 가  
 가 (U.S. Department of  
 Commerce, 2002).<sup>1)</sup> IT 1980~90  
 가 . . ,  
 IT IT “IT (IT Everywhere,  
 IT Inside)”<sup>2)</sup> ( , 2002).  
 IT IT R&D  
 가 . IT  
 IT ( , 2003).  
 IT ,  
 IT 가 .  
 가 (Chiesa and Manzini, 1998),  
 IT 가  
 .  
 IT 가 .  
 IT 가  
 IT (President’s  
 Information Technology Advisory Committee: PITAC)가 ‘Information Technology  
 Research: Investing in Our Future(1999)’ 가 (National Science  
 and Technology Council: NSTC)가 ‘Information Technology for the Twenty First  
 Century: A Bold Investment in America’s Future(1999)’ ,  
 . NSTC ‘Information  
 Technology: The 21st Century Revolution(2000)’  
 , 6<sup>3)</sup> .

---

1) 1974~95 가 1.4% 가 , 1995~2000 가 2.7% 가  
 , 2001 3/4 1.5%  
 2) IT IT (embedded) IT  
 IT (IT everywhere, IT Inside)  
 3) IT , , - , ,

1191 2005. 4. 13. ....

, 2

IT

(NSTC, 2002).

2010

, S/W

IT

BT, NT, ET

( , 2002).

Gap

IT

가

IT

가

(

, 2002).

IT

Gap

. II

IT

, IT

IT

, III

IT

, IV

Gap

, IT

IT

, V

## II. IT

### 1. IT

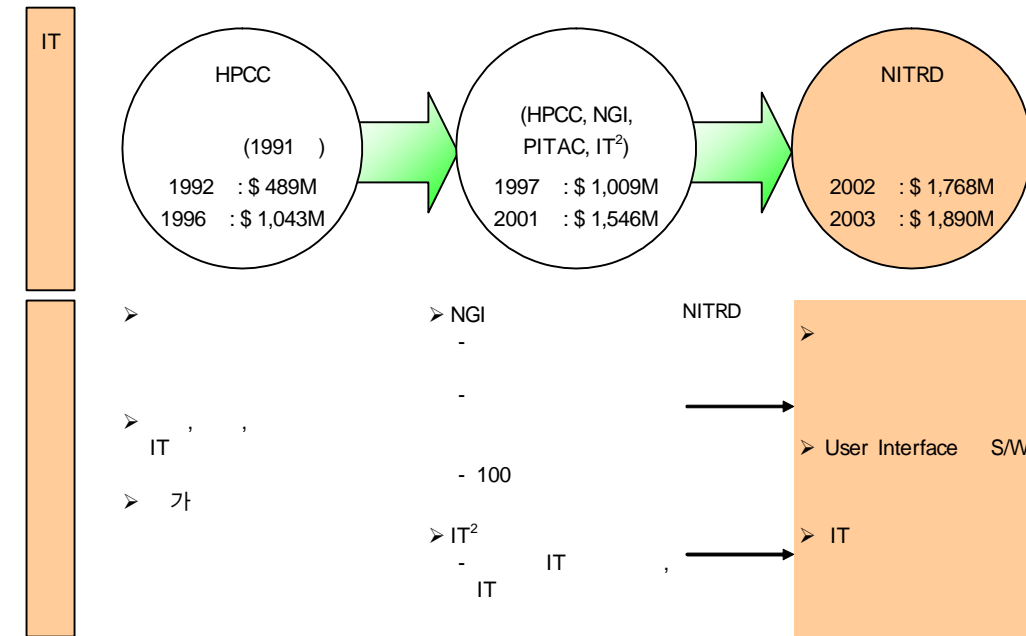
IT

( 1) . IT

, 1991

(High Performance Computing and Communication: HPCC)

HPCC HECC(High End Computing and Computation), LSN(Large Scale Networking), HCS(High Confidence Systems), HuCS(Human Centered Systems),



< >: Networking and IT R&D(NITRD, 2002)

( 1 ) IT

ETHR(Education, Training and Human Resources) 5 , 5

1 (1992~1996) 2 (1997~2001) .

가 가 , , , 가

(High Performance Computing, Communications, and Information Technology: HPCCIT) 가 (National Coordination Office: NCO)

(Next Generation Internet: NGI) 1996 1998

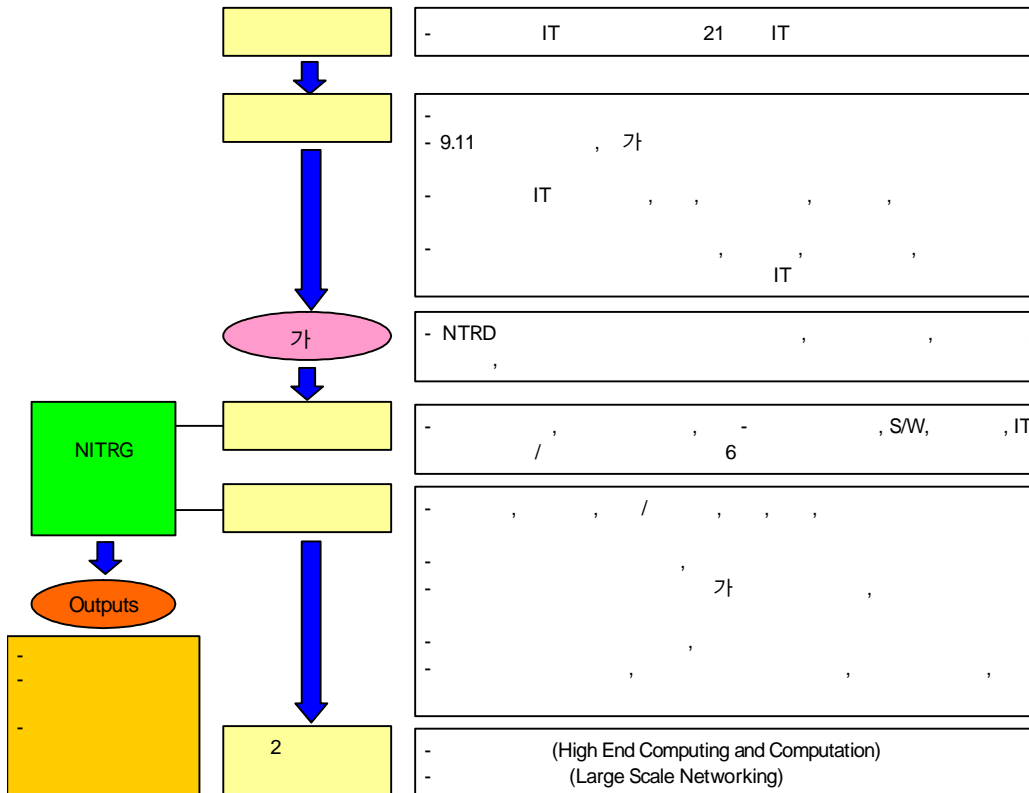
2001 (Defense Advanced Research Projects Agency: DARPA), (National Science Foundation: NSF), (National Aeronautics and Space Administration: NASA),

(Department of Energy: DOE), 가 (National Institutes of Health: NIH),  
 (National Institute of Standards and Technology: NIST),  
 1 . NGI 가 ,  
 , , 가  
 , 100  
 , NGI , HPC  
 (Next Generation Internet Act of 1998) . ,  
 NITRD  
 PITAC(1999) IT 2000 2004  
 47 가  
 10 가 , 가 S/W ,  
 가 , IT  
 4  
 PITAC 1999 6 IT<sup>2</sup> (NSTC,  
 1999) 2000 3 6,600 IT ,  
 , IT  
 NSTC(2000) 6  
 .  
 NITRD (NSTC, 2001)  
 7 (National Grand Challenge Applications)  
 IT 2003 NITRD  
 (NSTC, 2003) 2001 9.11 가 IT R&D .  
 가  
 1997 2001 IT<sup>2</sup> HECC NGN(Next Generation Network)  
 NITRD HEC(High End Computing) LSN ,  
 가 S/W,  
 S/W IT

2. IT

( 2) IT NITRD  
 IT IT 21  
 IT ,  
 , 가,  
 , , , ,  
 (Biomedical),  
 IT

IT



< >: NITRD(2002)

( 2) IT R&D

가

IT R&D

2010

IT

, S/W  
2003 IT R&D

IT

S/W

IT

4)

가

### III. IT

#### 1. IT

IT ( 2)

6

가.

(High End Computing)

2003

Grid

(Large Scale Networking)

(All-Optical Networking)

4) UCLA

2 (Exabyte)

가

.....

StarTap 가  
 가  
 , StarLight 10 가  
 , GIS , GRID

< 1> IT

6 R&D	
-	: End-to-End , GRID
-	: Hybrid
-	: Graphical User Interface, S/W
-	: 가 S/W
IT	: , BT-IT 가

< >: NITRD(2002)

(Software Design and Productivity)

, S/W  
 , 가  
 IT S/W,  
 S/W , S/W,  
 B2B

(Human-Computer Interaction & Information Management)



, S/W , S/W ,

(High-Confidence S/W & Systems)

가 (Self-diagnosing), 가 (Self-correction), 가 (Self-healing),

가

(Fault Tolerance) ,

S/W ,

. IT

(Socioeconomic Impacts of IT)

, IT

, -IT 가

IT

가

IT

IT

IT

IT

, IT

가

IT R&D ,

2.

가

IT

가

IT R&D

. NITRD

IT

< 2 >

IT

< 2 >

가	- IT	-
	-	- BT IT
3D	- , SW, 3D	- BT IT
IT	- ,	- 가
	- , 3D SW,	-
IT	- , , SW 가	- , 가 IT
	- 가 , -	- 가 15~ - 20 가 IT

, 9.11

, 가 가 , IT .

#### IV. Gap IT

(Gap)

( , 1999).

IT  
 . , IT IT  
 . , 5  
 IT Gap  
 . , Gap IT  
 . IT

(Feedback) IT 가 .  
 < 3> 3 IT  
 Gap . Gap (As Is)

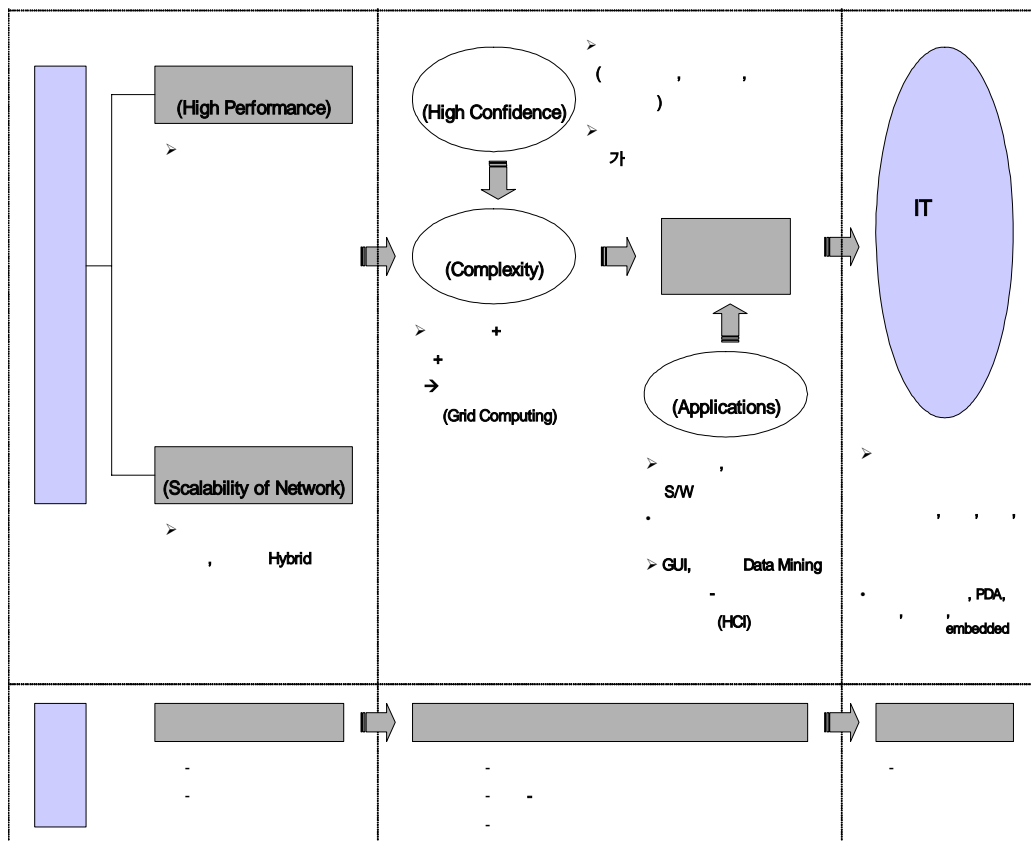
< 3> Gap

IT

	(To Be)A	(As Is) B	GAP (A-B)	(HOW)
	- GRID Computing	- 가 (ETRI ) - NEC	- 5 -	- 가 - GRID
	- Hybrid 가 - 2010 Peta(10 <sup>15</sup> )	- - IP 가	- 1-3 - 가	- - , GIS , - Peta ( 가 ) GRID
	- -	- - 2D	- 2	- 가가 -
	- 가 , IT 가 SW	- SW * SW *	- SW 2	- SW , SW (Needs) - SW, SW IT , 가
	- - - -	- - IT-BT -	- 5-10 - 3-5	- - - IT-BT 가 가

(To Be)

2002  
 9 IT ( , , , )  
 S/W • , , 가 , , ) , 87  
 • • 가 3~4  
 ( , 2002).  
 ( 3) IT IT  
 IT



( 3) IT

(Cross-functional)

가

5)

) 가가 가

가 SW •

가

가

, IT

(

)

가

V.

IT

IT

IT

IT

,

, SW,

6

World Best/World First

10

2010

(Peta)

Tera

가

가

가

IT

, MEMS, S/W

가

, IT

, IT

가

IT

5) Cisco Chambers '2002 ITexpo' (Cross-functional)

가 , , , IT , 2010 IT , S/W IT , 가 IT S/W , 가 가 , , , IT , , 가 IT , , , IT 가 가 가 IT , , 가 , Gap IT IT ,

< >

[1] (2002), "IT : ," CEO Information, 340 , , pp.1-18.  
 [2] , , (2003), "IT : ," , Vol.28, No.1B  
 [3] , , (2002), "2002 ," , 1031  
 [4] (1999), ERP , , 40  
 [5] (2002), , : .

- [6] (2002), R&D , .
- [7] AAAS(2002), A Preview of AAAS Report XII: Research and Development FY2003, American Association for the Advancement of Science.
- [8] Chiesa, V. and Manzini, R.(1998), "Towards a Framework for Dynamic Technology Strategy," Technology Analysis & Strategic Management, March, pp.111 - 129.
- [9] Department of Commerce(2002), Digital Economy, Economics and Statistics Administration, Open Document.
- [10] Freeman, C. and Soete, L.(2000), The Economics of Industrial Innovation(3rd Ed.), Continuum, London and New York.
- [11] NITRD(2002), Strengthening National, Homeland, and Economic Security, Networking and Information Technology Research and Development.
- [12] Mowery, D.C. and Nelson, R.R.(1999), Sources of Industrial Leadership: Studies of Seven Industries, Cambridge University Press.
- [13] NSTC(2002), Strengthening national, Homeland, and Economic Security, National Science and Technology Council.
- [14] PITAC(1999), Information Technology Research : Investing in our Future, President's Information Technology Advisory Committee.
- [15] Tasse, Gregory(1997), The Economics of R&D Policy, Westport, CN: Quorum Books, Greenwood Publishing Group.
- [16] Whitehouse(2001), IT Spending: Report on IT Spending for the Federal Government for FY 2000, 2001, and 2002.