

# PROMISING INVESTMENT OPPORTUNITIES



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# 1. Trends in the Global ICT Industry

## SMART

- Across the ICT industry, smart devices such as smartphones, smart televisions, smart home appliances and smart work are drawing attention, and the convergence of such devices is happening rapidly.
- Expectations are high for new smart devices that are affecting not only hardware and software, but also application and network.

## Rise of Emerging Markets as Leaders of the IT Industry

- While the growth of the IT markets of advanced countries is slowing, the purchasing power and IT investment of emerging economies including China and India are continuously expanding.

ex. IT Investment by Region  
 - North America: -0.6%, Europe & Middle East: -0.1%  
 - Latin America: +12.7%, North Asia: +6.4%, Asia Pacific: +3.4% [Gartner, 2012]

- Gartner expects global IT investment to grow by a mere 3.9% compared to 2011 to USD 3.35 trillion in 2012, due to the slow recovery of the global economy, weak investment in IT by companies, and saturation of the communications services market.

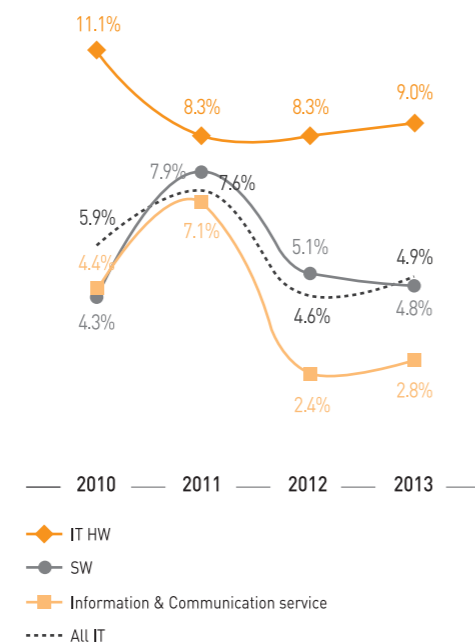
## Prospects of Global IT Market (by Region & Item)

### Regional IT Market Growth

(Units: %)

	2011 <sup>E</sup>	2012 <sup>E</sup>
Advanced Markets	5.9	3.0
USA	5.7	2.9
Western Europe	5.9	3.4
Japan	6.2	2.3
Emerging Markets	10.6	7.4
Latin America	12.3	7.5
Eastern Europe	5.0	5.0
Middle East/ Africa	9.1	6.4
Asia/Pacific	11.8	8.2
China	13.8	13.4
India	15.5	14.9
Global	7.6	4.6

### Global IT Market Growth



[Source: Gartner, IDC, NIPA]

- In major countries such as the United States, Japan and China, governments are making efforts to dominate the global IT market and revitalize their economy through government-led IT projects.

- USA  
Adopted "smart grid" as a new growth engine and continuously pursuing IT-focused policies including digital new deal and green IT (ITC energy).
- China  
Enhancing comprehensive information and communications infrastructure and building systems for the development of the information industry in order to establish a xiaokang (小康) society by 2020.
- Japan  
Established and pursuing "i-Japan Strategy 2015," aiming at digital inclusion, which means achieving an entirely digital society.
- UK  
Pursuing a Greening Government ICT policy that aims at reducing carbon emissions of the ICT sector by 60% by 2050.

- The strong growth of the display, mobile phones, SW and IT convergence industries is expected.
- (Display) A price decrease is expected due to low-priced Chinese products, but demand is expected to grow again thanks to the recovery in demand for televisions and sporting events including the London Olympic Games.
- (Mobile phones) High growth of over 10% is expected due to the expansion of the smartphone market.
- (SW) SW packages and IT services are expected to grow thanks to the rise of emerging economies in South America and Asia and the expansion of new services such as cloud computing.
- \* The IDC predicts the global SW market to be at USD 0.98 trillion in 2012.
- (IT Convergence) IT convergence industries, including tablet PC and smart TV, are expected to rise as a new growth engine of the global IT market.

## Prospects of Global IT Convergence Device Market

	2009	2010	2011 <sup>E</sup>	2012 <sup>E</sup>
Smartphones (Units: 100 million)	1.7	2.9	4.8	6.2
Growth rate (%)	16.5	68.1	68.3	29.6
System semiconductors (Units: USD 100 million)	1,875	1,978	2,059	2,173
Growth rate (%)	25.9	5.5	4.1	5.5
Tablet PC (Units: USD 100 million)		91.8	325.8	499.5
Growth rate (%)			255.1	53.3
Smart TV (Units: 10,000)	1,517	4,203	5,885	8,087
Growth rate (%)		177	40	37.4

[Source: Gartner, DisplaySearch, NIPA 2012]

## 2. Characteristics and Current Status of Domestic ICT Industry

### ICT Industry: Key Industry Contributing to National Economic Growth

- Exports of the domestic ICT industry stood at USD 153.9 billion in 2010 and USD 156.6 billion in 2011, recording an all-time high for two consecutive years.
- In 2011, the ICT industry accounted for 28.2% of Korea's entire exports, showing steady growth since the recovery in 2010.
- In 2011, the production of IT devices exceeded KRW 300 trillion for the first time thanks to the strong domestic smart mobile market and increase in the production of home appliances, including smart televisions.
- The trade balance of the ICT industry in 2011 recorded a surplus of USD 75.1 billion, which is 2.4 times larger than the trade surplus of the entire Korean economy (USD 30.8 billion).

### Exports and Imports of Korea's ICT Industry

(Unit: USD 100 million)

		2008	2009	2010	2011	2012.01-05
Exports	Entire industries	4,220	3,635	4,664	5,552	2,282
	IT	1,312	1,210	1,539	1,566	604
	Share	31.1%	33.3%	33.0%	28.2%	26.5
Imports	Entire industries	4,352.7	3,230.8	4,252.1	5,244.6	2,222
	IT	735.2	620.2	756.2	815.2	318
	Share	16.9%	19.2%	17.8%	15.5%	14.3
Balance	Entire industries	-133	405	412	308	60
	IT	576	589	783	751	286

[Source: Ministry of Knowledge Economy, NIPA, 2012.06]

### Major Products of ICT Industry: Semiconductors, Display Panels, Mobile Phones

- Exports of semiconductors, display panels and mobile phones in 2011 recorded USD 50.1 billion, USD 31.3 billion, and USD 25 billion, respectively. The exports of the three sectors combined accounted for 68% of all IT exports.
- Korea is likely to dominate the high value-added sectors including smartphones, system semiconductors, and 3D or OLED panels, due to high interest in those sectors and the rapid development of technologies.

### Global Shipping of Smartphones in Q1 of 2012

(Units: million)

Company	Samsung	Apple	Nokia	RIM	Sony	Huawei	ZTE
Shipping	43	35	11.9	11.1	7	6.8	4.9
Share (%)	35.9	29.2	9.9	9.3	5.8	5.7	4.1

Source: ABI Research News, 2012.06

- New markets are needed as current exports are focused on China, the United States, and Japan.
- Exports to the three countries combined account for nearly 64% of the total.

### Exports of Major Products

(Units: 100 million, %)

	Semiconductors		Panels		Mobile phones		Total	
	Amount	Growth	Amount	Growth	Amount	Growth	Amount	Growth
Total	501.5	▲1.1	313.9	▲7.1	250.6	0.7	1,569.70	▲2.0
China (including Hong Kong)	269.4	▲0.3	231.5	8.1	55.3	▲8.4	738.6	6.5
USA	27.3	▲25.1	2	▲72.0	85.7	1.6	177.2	▲4.2
Japan	30.8	▲7.6	4.7	▲54.7	19.9	148.8	83.9	6.8
EU	25.5	▲32.1	36.7	▲30.7	25.8	▲32.0	144.9	▲22.9

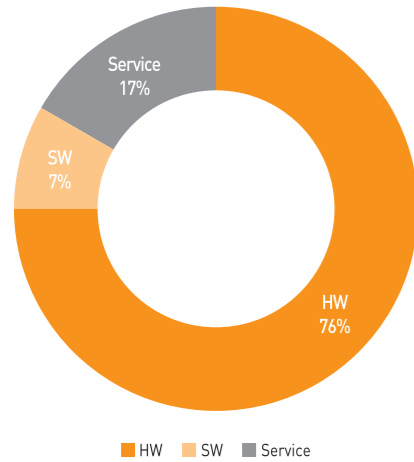
Source: Ministry of Knowledge Economy, NIPA, 2012.01



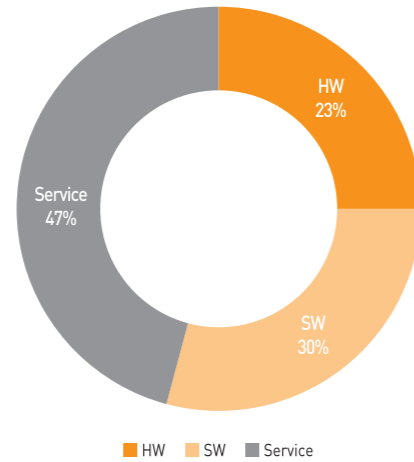
### Relatively Weak Software and IT Services

- Development of the ICT industry has disproportionately focused on hardware, while the development of the software and IT service sectors is a third that of the global market.

Korea



Global Market



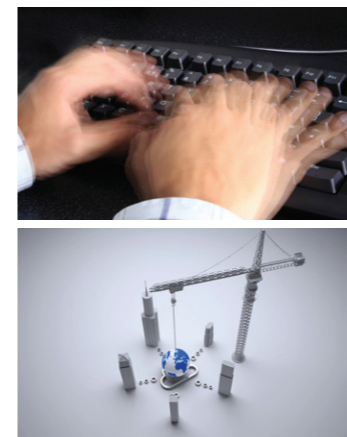
Source: Korea Communications Commission, NIPA, 2011

- As the focus of the ICT industry shifts from hardware to software, the convergence of hardware and software is becoming a critical factor in the competitiveness of the ICT industry.
- Other sectors such as manufacturing and services are also shifting their focus to software.
- The government is mapping out policies to enhance software competitiveness and nurture talents.

## 3. Direction of Investment Promotion in ICT

### Emergence of New Technologies and Industries from Technology Convergence

- IT, NT, BT, CT, and other technology convergence is expected to trigger innovative social and economic transformation, including the rise of new industries.
- Changes in IT environment including contents, terminals, and network digitalization are expected to result in the development of digital convergence, such as ubiquitous services.*
- Investment-promotion efforts are focused on supporting services related to R&D and expanding outsourcing for R&D, in accordance with shorter life spans of technologies and larger-scale investment projects.



### Current Status of IT Convergence Industry

- IT Convergence: Combining IT with existing technologies or traditional industries to advance technologies and industries.
- Actively attracting foreign businesses for technology transfer and training skilled workers.
- In Korea, IT convergence with the automobile, machinery, construction, and energy industries is being rapidly developed while convergence with the domestic medical and robot industries is relatively weak.
- Therefore, investment promotion is focused on attracting more investors by linking the IT industry with other industries Korea is competitive in.

### IT Convergence Market Size (estimated)

(Unit: USD billion)

	Global Market Size	Domestic Market Size
IT+automobiles	120	5
IT+shipbuilding	13.5	0.36
IT+construction	264	3.4
IT+machinery	160	9.1
IT+textiles	165.9	3.1
IT+medicines	160	1.3
IT+robots	18.7	0.32

Source: Korea Communications Commission, annual report 2011.

### Spectrum Shift of Investment Promotion to R&D Centers and IDCs

- Environment for R&D Centers
  - World-class IT infrastructure, high awareness of the IT industry, highly skilled researchers, easy access to other Asian countries, safety from natural disasters compared to Japan and Southeast Asian nations
- Foundation of Asian Base for Internet Data Center (IDC)
  - The recent internet environment, which is focused on a smart ecosystem, calls for cloud computing that helps users respond swiftly to the rapidly changing business environment regardless of time or place.
  - Global companies are increasingly interested in founding IDCs in Korea, as the earthquake in Japan in March of 2011 highlighted Korea's stable supply and low prices of electricity.
    - ex. Foundation of IDC in Korea and a joint venture with KT by SoftBank (Japan) (December 2011)
- Policy Directions and Future Policies
  - Companies expected to lead the emerging IT convergence sector are key subjects of policies, which are aimed at making Korea an Asian R&D hub by attracting R&D centers.
    - ex. Cisco (USA) has founded a global joint R&D center (GCoE) in Songdo, and is using it as an R&D headquarters for the construction of U-cities.

### ICT Industry Trends in 2012

**Gartner** Technology Trends Impact People, Business and IT Experiences

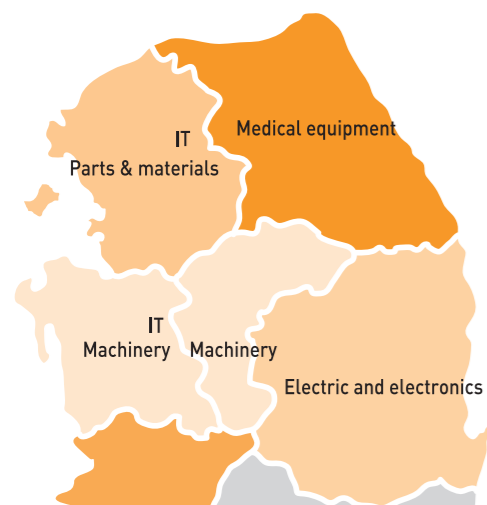
**Top 10 Strategic Technology Trends for 2012**

01   Media tablets and beyond	<b>Human Experience</b>
02   Mobile-centric applications and interfaces	
03   Contextual and social user experience	
04   Internet of Things	<b>Business Experience</b>
05   App stores and marketplaces	
06   Next-generation analytics	
07   Big data	<b>IT Dept. Experience</b>
08   In-memory computing	
09   Extreme low-energy servers	
10   Cloud computing	

## 4. Promising Regions for Investment

### Promising Clusters

#### Status of Regional Clusters



Cluster area	Specialized Industries
Metropolitan area	IT, Parts and materials
Chungcheong area	IT-related industries
Daegyeong area	IT fusion/complex industry
Gangwon area	Bio-IT fusion industry

### Promising Regions

	Specialized Sectors	Remarks
Pangyo Global R&D Center	IT convergence	GE, Sartorius
Songdo IT Industry Complex	IT, semiconductors	Kaco, Rittal
Magok District, Seoul	IT convergence	LG Science Park
Sangam DMC	IT research, services and manufacturing	Toray, SME Global Support Center
IT Convergence Complex at Daegu-Gyeongbuk FEZ	IT convergence	LG CNS
Advanced Industry Complex at Seongseo 5-cha District	Attracting urban high-tech industries	SSLM (Samsung Electronics-Sumitomo Chemical)
Mieum District, Busan and Jinhae	Global cloud data center	SBI-LG Systems (LG CNS-Soft Bank)

## 5. ICT Industry Organizations and Associations

### Relevant Organizations

	Websites	Remarks
Korea Communications Commission	<a href="http://www.kcc.go.kr/">http://www.kcc.go.kr/</a>	ICT industry statistics
National IT Industry Promotion Agency	<a href="http://www.nipa.kr">http://www.nipa.kr</a>	ICT industry trends and reports on each sector
Electronics and Telecommunications Research Institute	<a href="http://www.etri.re.kr">http://www.etri.re.kr</a>	ICT industry technologies and research reports
Korea Internet & Security Agency	<a href="http://www.kisa.or.kr">http://www.kisa.or.kr</a>	-
Korea Association for ICT Promotion	<a href="http://www.kait.or.kr">http://www.kait.or.kr</a>	-
Korea Software Industry Association	<a href="http://www.sw.or.kr">http://www.sw.or.kr</a>	-
Korea Information Technology Service Industry Association	<a href="http://www.itsa.or.kr">http://www.itsa.or.kr</a>	-
Federation of Korean Information Industries	<a href="http://www.fkii.or.kr">http://www.fkii.or.kr</a>	-
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