

# R&D and New Businesses for Sustainable Growth

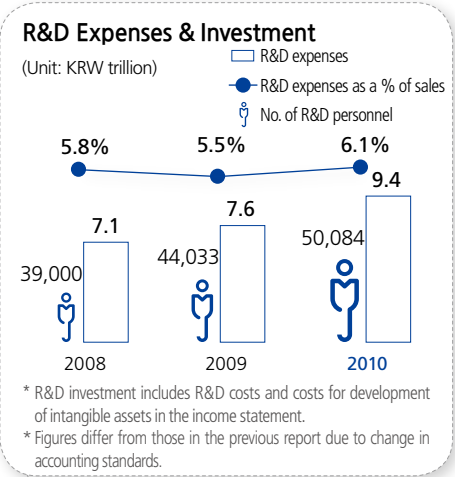
Constant change and superior products and services are vital for sustainable growth which, in turn, ensures the future of a corporation. To strengthen the foundation for sustainable growth, Samsung Electronics aggressively invests in R&D and new enterprises while maintaining strategic patent management.

## R&D Expenses & Investment

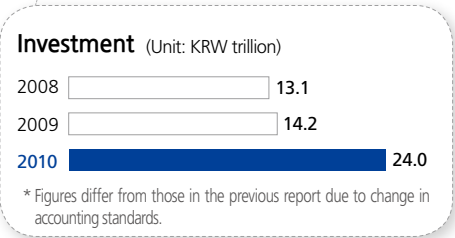
In 2010, Samsung Electronics invested KRW9.4 trillion, or 6.1% of consolidated sales in R&D. Currently, we employ 50,084 R&D personnel which is equivalent to 26% of our total workforce. In recognition of R&D endeavors, Samsung Electronics was included among the top 10 global companies in R&D investment announced by the U.K. Department for Business, Innovation and Skills. We will continue to secure qualified R&D personnel.



**R5: Creativity Generator**  
 Samsung Electronics held a ceremony for its new groundbreaking R&D center, R5, at Suwon Digital City in December 2010. Upon completion in 2013, R5 will turn Suwon Digital City into Samsung Electronics' global R&D hub and home to some 23,000 researchers.



Continued investment is crucial to upholding a distinctive edge in our core businesses. Samsung Electronics' investments amounted to KRW24 trillion in 2010, representing an increase of 69% over 2009.

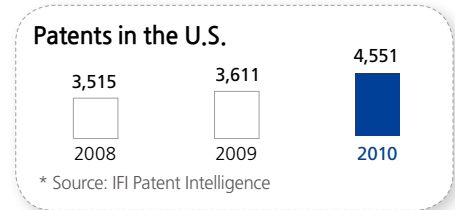


## Strategic Patent Management

Samsung Electronics practices strategic patent management for future growth. For the five-year period since 2006, we ranked second based on the number of new patents registered in the United States.

### Patent Portfolio Strategy

We are increasing patent cooperation with major companies to resolve the risk of patent disputes related to our core businesses. In 2010, we concluded a cross licensing agreement with IBM, the company holding the most patents in the United States, and signed an agreement for cooperation on licenses and patents with Intellectual Ventures, the world's largest patent management firm. Additionally, we concluded



a patent purchase and license agreement with Nanosys and Unidyme in order to acquire new LCD technologies.

# Lifecare

Our goal is to generate annual sales of US\$400 billion by the year 2020 and join the ranks of the world's top 10 companies. To that end, we are seeking to extend our business domain beyond our existing infotainment businesses centered on sets and components (IT, telecom and AV), adding new business areas related to lifecare (medical/biotech, environment/energy, and convenience/comfort).

## Changing Society

World population in 2050

9 billion

Persons aged over 60 as a % of total population

25%

Global medical expenditure as a % of GDP in 201

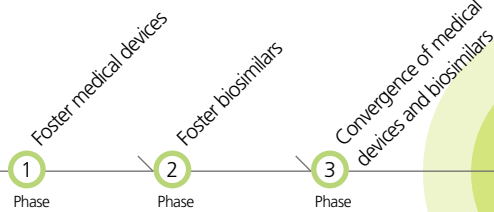
11%

\*Source: World Population Prospects

\*Source: WHO

We believe that we have a responsibility to resolve social issues while achieving growth. A fast aging population is a global phenomenon and people are increasingly seeking ways to lead healthy lives. Against this backdrop, Samsung Electronics decided to invest in health-care as a future business in 2010 with the objective of improving quality of life and sustaining growth.

## Biotech & Health-care Business Development



### Biosimilar



Samsung Electronics set up a biopharmaceuticals joint venture in 2011. Equity investments into the entity will be made until 2012 by Samsung Electronics (40%), Samsung Everland (40%), Samsung C&T (10%), and Quintiles (10%). In March 2011, Samsung Electronics

gained approval to conduct a clinical trial for a biosimilar of Roche's MabThera. The approval and formation of the joint venture provide positive momentum to the biosimilar business.

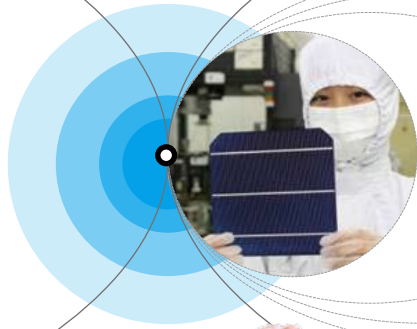
### Medical Devices

We acquired a stake in Korea's largest medical device maker, Medison, in December 2010 to nurture the health-care business, another future growth engine for Samsung Electronics. The combination of Samsung Electronics' world-leading CE and IT technologies and success on the global stage with Medison's medical equipment knowhow and technology should produce vast synergies. Medison will offer differentiated products, step up development of new technologies, carry out global marketing and expand its sales network to gain a strong footing in the global medical device market.

# Solar Cells

Joining global efforts to address climate change and conserve energy, Samsung Electronics expanded into the solar cell and module business. Samsung aims to deliver highly efficiency, industry leading, solar products, and will harness our cutting-edge technologies for LCD and semiconductor manufacturing to build a competitive solar business.

2020 target based on 2008  
Korea's GHG reduction target



## Our Achievements

Samsung Electronics is developing premium products boasting high efficiency and quality to capitalize on the solar market which is growing at a fast rate at over 20% per annum. In 2010, we unveiled our 260W crystal white module and 250W premium black module, both of which used the screen printing (SP) process. The 260W module was targeted towards the rooftop solar systems market in the United States and Europe. Compared to the 230W products already launched by competing firms in Germany, Japan and China, the output of Samsung's 260W module is about 30W higher. Moreover, the 260W module offers a 15.9% efficiency as opposed to about 14% efficiency of competing products.