

## News & Reviews

### October 2003: Herbert Demel Appointed CEO of Fiat Auto

Herbert Demel has been appointed Chief Executive Officer of Fiat Auto, the Fiat Group subsidiary that runs the Alfa Romeo, Fiat and Lancia brands, effective November 15, 2003.



Fiat has thanked Giancarlo Boschetti, who will leave the Group on the same date, for the intense work he performed in almost forty years of activity at top management levels, and expresses its best wishes for his future.

From the end of 2002 Mr. Demel has been President and Chief Executive Officer of Magna Steyr, a leading company in automotive engineering, two- and four-wheel-drive transmissions and in the development and assembling of automobiles for third parties.

Demel, born in Vienna 50 years ago, has a degree in mechanical engineering and vast professional experience in the automotive sector at an international level.

From 1984 to 1990 he was responsible for the development of ABS applications and quality control at Robert Bosch.

**N.B.: 1st semester 2004 losses: 570 million euro**

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## Dr. Herbert DEMEL

- **Nov, 2002** MAGNA STEYR AG, Oberwaltersdorf  
President and Chief Executive Officer
- **May, 1997** Volkswagen Brazil President
- **March, 1995** AUDI AG, Ingolstadt chairman of the Management Board
- **Feb, 1994** Speaker of the Management Board and Chief Executive Officer  
with additional responsibility for Sales and Marketing
- **March, 1993** Member of the Board Responsible for Research and  
Development
- **1990** Senior Manager Responsible for Power Train Development **Audi AG**
- **1989** Robert Bosch GmbH, Stuttgart Responsible for Gearbox control  
units. ABS/ASR Application
- **1985** In charge of ABS / ASR-Applications
- **1984** Coordinator for Anti-Lock-Braking-System (ABS) Applications **Bosch GmbH**
- **1981** Doctorate
- **1978** Institute for Internal Combustion Engines and Automotive  
Engineering, Technical University Vienna Scientific / Engineering Assistant
- **1971** Vienna Technical University Studies of Mechanical Engineering  
Graduated as "Diplom Ingenieur"
- **1953** Born in Vienna, Austria

**The innovation capacity of small and medium-size enterprises ("SME") shows contrasting aspects.**

**For established SME's, maintaining a significant innovation effort independently is often prohibitatively expensive. They will benefit greatly from cooperative efforts in technological surveillance, links with academic institutions, joint development projects, and the possibility of funding through public subsidies. Innovation-oriented SME's have the potential of reacting to change much more rapidly than large firms. With the pace of innovation doubling every ten years (\*), such agility is a major advantage. It also carries enhanced risk. The propensity, in the EU, to strive for long-term stable employment is a major handicap in fostering innovation-oriented SME's and penalizes economic growth in the EU.**

**(\*) Ray Kurzweil "Rules of Invention", Innovation Review (MIT), May 2004**

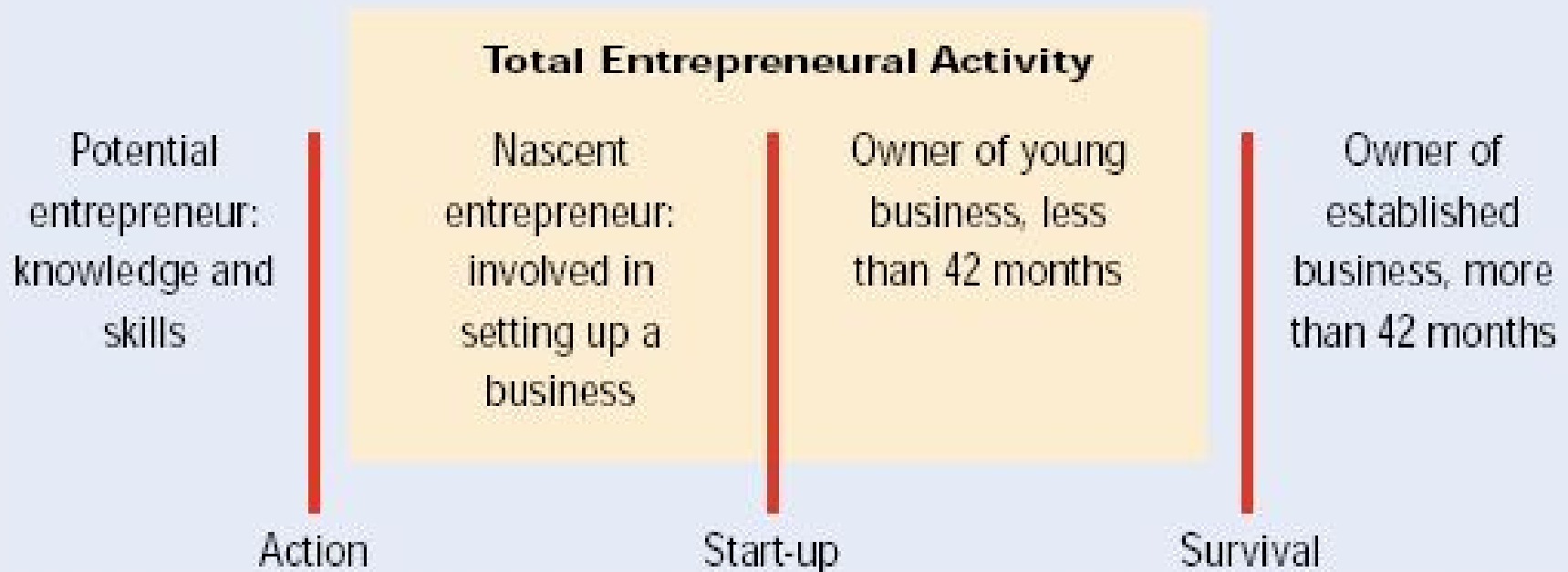
**On the other hand, the creation of "start-ups", new innovation-based companies, is increasingly recognised as a major contributor to growth in developed countries.**

**"First, innovative start-ups often become fast-growing enterprises, and second, new products and processes provided by innovative start-ups are input for other (new) enterprises." (1)**

**(1) Entrepreneurship  
in the Netherlands**

see [www.eim.nl](http://www.eim.nl) or [www.ez.nl](http://www.ez.nl)

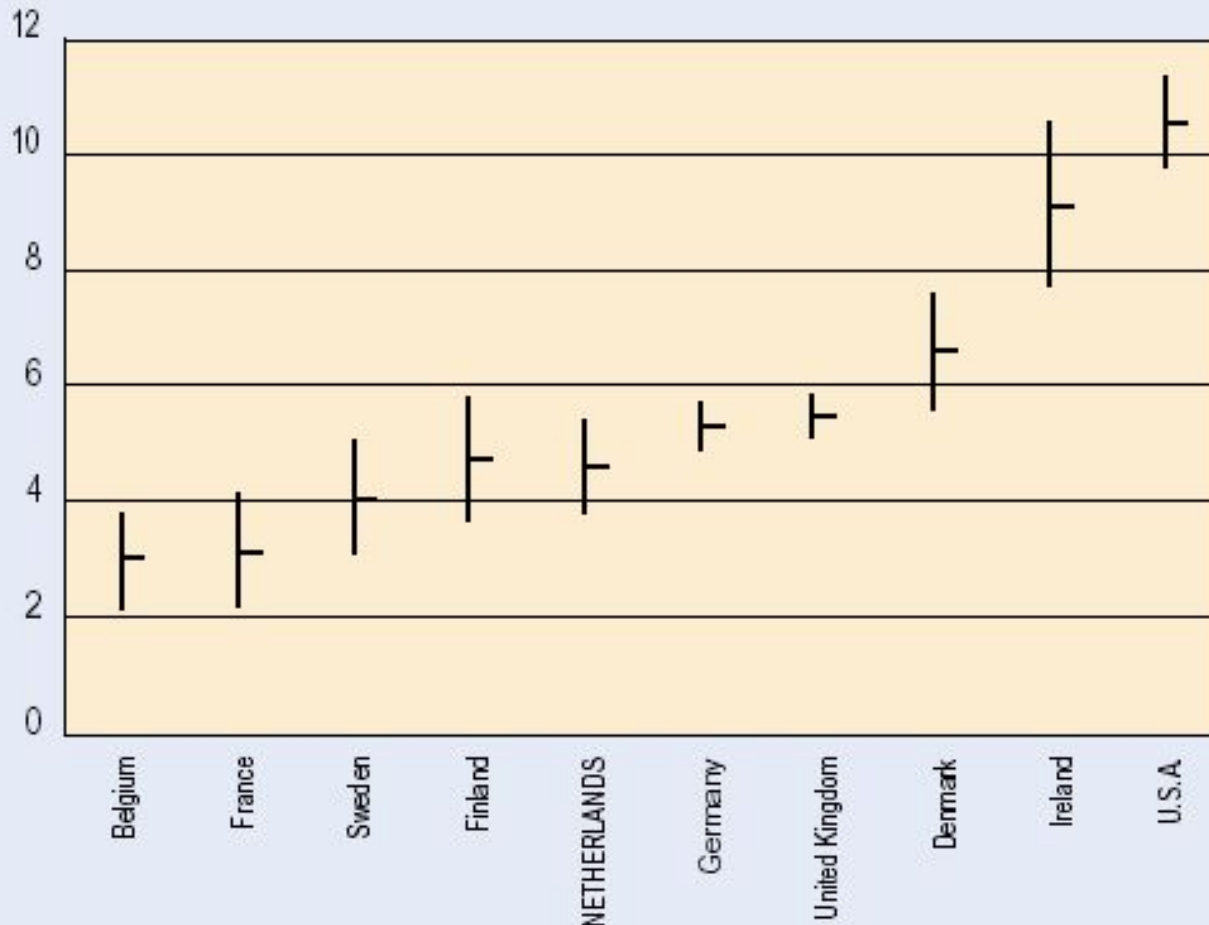
**Figure 1 Business start-up cycle and total entrepreneurial activity**



## Entrepreneurship in the Netherlands

see [www.eim.nl](http://www.eim.nl) or [www.ez.nl](http://www.ez.nl)

Figure 2 Total entrepreneurial activity (TEA) indices, 2002

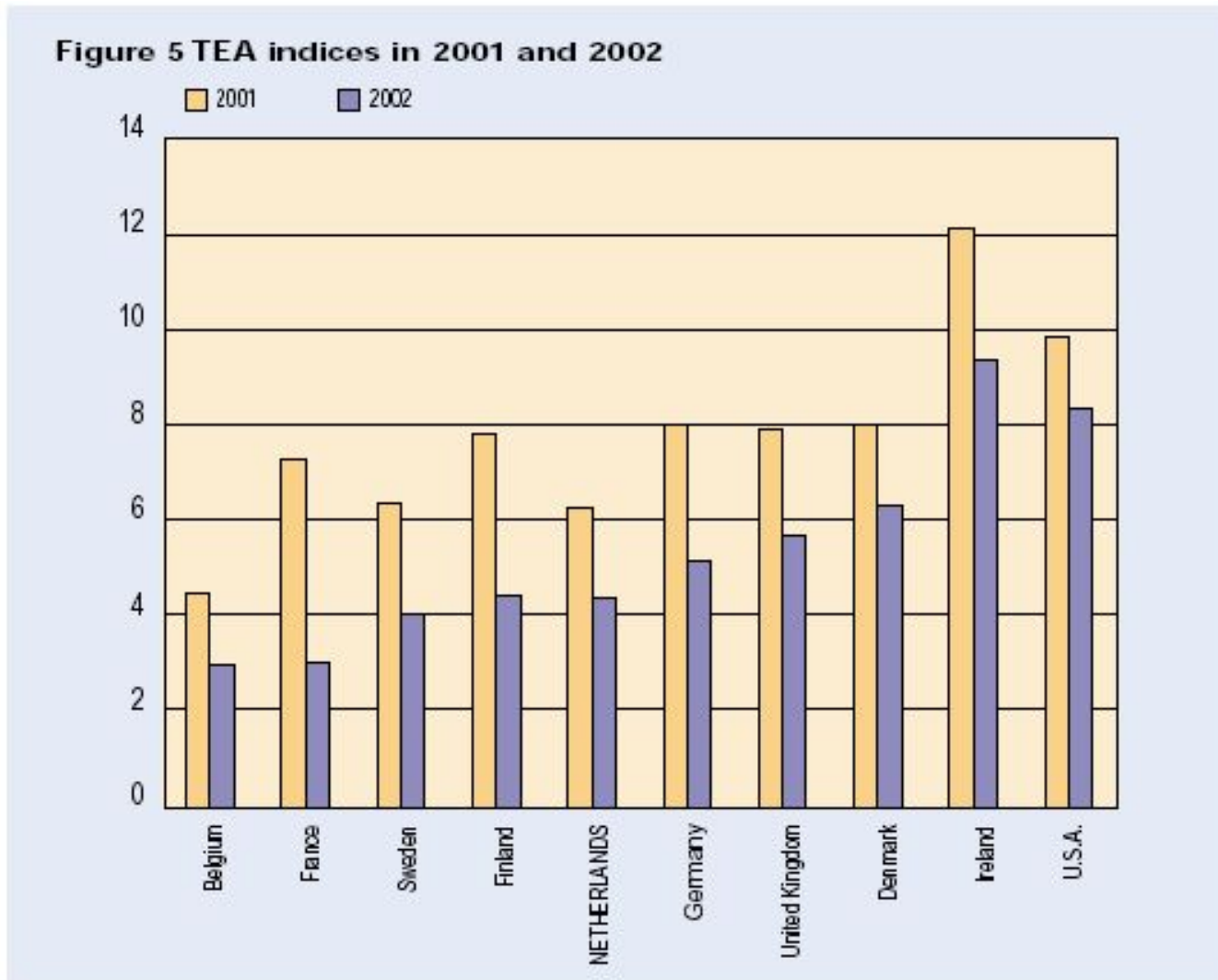


Note: TEA is defined as number of nascent entrepreneurs and owners of young businesses per 100 individuals in the 18-64 adult population.

Source: EIM, on the basis of GEM (2002). The vertical bars represent the 95 percent confidence interval.

# Entrepreneurship in the Netherlands

see [www.eim.nl](http://www.eim.nl) or [www.ez.nl](http://www.ez.nl)



Source: GEM 2002.

**Table 3.1 R&D spending as % of GDP (2002)**

	USA	FIN	B	D	UK	DK	F	NL	EU
Public	0.66%	0.98%	0.56%	0.72%	0.66%	0.75%	0.77%	<b>0.88%</b>	0.67%
Private	2.04%	2.68%	1.45%	1.80%	1.21%	1.32%	1.36%	<b>1.14%</b>	1.28%
Total	2.70%	3.66%	2.01%	2.52%	1.87%	2.07%	2.13%	<b>2.02%</b>	1.95%

Source: European Trendchart on Innovation 2002

**N.B. :**  
Relative to an active population of 1000, Italy counts 2.9 researchers, the U.K. 5.5, Canada 6.1, Germany 6.7, France 7, the U.S. 7.9, Japan 9.7. ( French Ministry of Research, 2000)



**Table 3.2 R&D spending Public versus Private**

	USA	FIN	B	D	UK	DK	F	NL	EU
Public	24%	27%	28%	29%	35%	36%	36%	<b>44%</b>	35%
Private	76%	73%	72%	71%	65%	64%	64%	<b>56%</b>	65%

*Source: European Trendchart on Innovation 2002*

## **ITALY : Economy - overview:**

**Italy has a diversified industrial economy with roughly the same total and per capita output as France and the UK. This capitalistic economy remains divided into a developed industrial north, dominated by private companies, and a less developed, welfare-dependent agricultural south, with 20% unemployment. Most raw materials needed by industry and more than 75% of energy requirements are imported. Over the past decade, Italy has pursued a tight fiscal policy in order to meet the requirements of the Economic and Monetary Unions and has benefited from lower interest and inflation rates. The current government has enacted numerous short-term reforms aimed at improving competitiveness and long-term growth. Italy has moved slowly, however, on implementing needed structural reforms, such as lightening the high tax burden and overhauling Italy's rigid labor market and over-generous pension system, because of the current economic slowdown and opposition from labor unions.**

**<http://www.cia.gov/cia/publications/factbook/geos/it.html>**

## **GDP - composition by sector:**

**agriculture: 2.4%**

**industry: 30%**

**services: 67.6% (2001 est.)**

## **Labor force - by occupation:**

**services 63%, industry 32%,  
agriculture 5% (2001)**

## **Industries:**

**tourism, machinery, iron and steel,  
chemicals, food processing,  
textiles, motor vehicles, clothing,  
footwear, ceramics**

**Electricity – production: 258.8 billion kWh (2001)**

**Electricity - production by source:**

**fossil fuel: 78.6%**

**hydro: 18.4%**

**other: 3% (2001)**

**nuclear: 0%**

**Electricity – consumption: 289.1 billion kWh (2001)**

**Electricity - exports: 556 million kWh (2001)**

**Electricity - imports: 48.93 billion kWh (2001)**

**The structure of the Italian economy differs from that of most of the other EU member states in that it is characterized by few large enterprises and a predominance of medium-sized and, particularly, small firms (SMEs). The average size of Italian firms is the smallest in Europe. In the manufacturing sector, 98 percent of firms have fewer than fifty employees, while 83 percent have less than ten. SMEs (less than 250 employees) account for 70 percent of GDP, while for small firms (fewer than 20 employees) alone the figure is 42 percent.**

**from "Italy" by Michael Callingaert in: " The International Economy", fall 2003**

Yet these firms—a large percentage of which are family-owned—have prospered by developing niche specialization both in Italy and globally. In large part, production covers a range of consumer goods where Italy has become a world leader. It accounts, for example, for over **20 percent of world ceramic tile production, 16 percent of shoes and leather goods, and over 10 percent of glass and ceramics, and it holds or shares world leadership in trade for a long list of products from eyeglasses, jewelry, and wool and silk textiles to furniture, white goods, and specialized industrial machinery.**

Their success is due in large measure to a combination of imagination, innovation, flexibility, and adaptability.

from "Italy" by Michael Callingaert in: " The International Economy", fall 2003

**“Industrial districts” are a key element..**

**..Sassuolo accounts for almost  
40 percent of tile and ceramics  
exports, Como for over 25 percent  
of silk fabric, and Belluno for  
18 percent of eyewear.**

**from "Italy" by Michael Callingaert in: " The International Economy", fall 2003**

The logo for 'Innovation' is written in a white, cursive script on a dark blue rectangular background. The background of the entire slide features a network of glowing green and yellow lines on a dark blue background, resembling a molecular or neural network structure.

Innovation

## Innovating Regions in Europe

# IRE Network

<http://www.innovating-regions.org/network/regionalstrat/projects.cfm?trip=trip>



## **Partnership and objectives**

**The SESAMES partnership was formed by two Italian regions, Piedmont and Puglia, and two German ones, Baden-Württemberg and Weser-Ems.**

**Piedmont, in north-west Italy, has 4.3 million inhabitants. The industrial sector is very strong, employing 42% of the workforce. The automotive industry, dominated by large producers and smaller suppliers, plays an important role.**

**Puglia, in the south of the country, has a population of 4 million. The region's mechanical industry has recently shown strong growth, mainly due to major sub-contracting automotive companies and the establishment of industrial multinationals in the region.**

<http://www.innovating-regions.org/download/SESAMES.PDF>

**The partners reviewed the technology and innovation support needs of companies in the automotive sector, as well as the available support services. A common methodology was used in all regions. SWOT analyses of supplier relationships were undertaken. Every region selected 50 companies to be analysed. Twenty underwent technology audits, and ten were chosen for in-depth interviews. The findings were then discussed with companies and other relevant actors.**

**Pilot projects were carried out in each partner region. The pilot projects of Baden-Württemberg focused on quality certification, increased customer satisfaction and the development of a programme to estimate material fatigue. In Piedmont, work was started on the establishment of a test laboratory for automotive components.**

<http://www.innovating-regions.org/download/SESAMES.PDF>

Two other projects focused on setting up a helpdesk for environmental certification, and on developing a competitive product using environmentally friendly production methods.

Puglia laid the foundations for an **Innovation Service Centre** – a laboratory for local automotive subcontractors. A market analysis was conducted to help subcontractors adapt to clients' needs, and a project was outlined that would meet regional **SMEs' needs for training**.

Weser-Ems set up a supplier database on the Internet, and established 'SESAMES Clubs' – discussion circles that brought companies together.

The pilot projects focused on the testing of a Bavarian model for a purchasing pool, the establishment of fairs where SMEs could present their products and services to potential clients, and the organisation of training courses to overcome the lack of skilled personnel.

<http://www.innovating-regions.org/download/SESAMES.PDF>

The regional pilot projects launched during SESAMES continued in most cases beyond the end of the project. The partners also outlined a joint project regarding business-to-business transnational exchange of professionals. The aim of this project was to set up a network to support companies' internationalisation through the exchange of **qualified staff**.

**N.B.: SWOT analysis = analysis considering Strength vs Weakness and Opportunity vs Threat**

# CHINA ORBITS MAN

BY STEPHEN CLARK  
SPACEFLIGHT NOW

Posted: October 15, 2003

Over a decade in the making and four decades behind the Soviet Union and United States, China became only the third nation on the planet to mount a manned space mission Wednesday when a single crewman vaulted into space inside a capsule for a one-day flight.

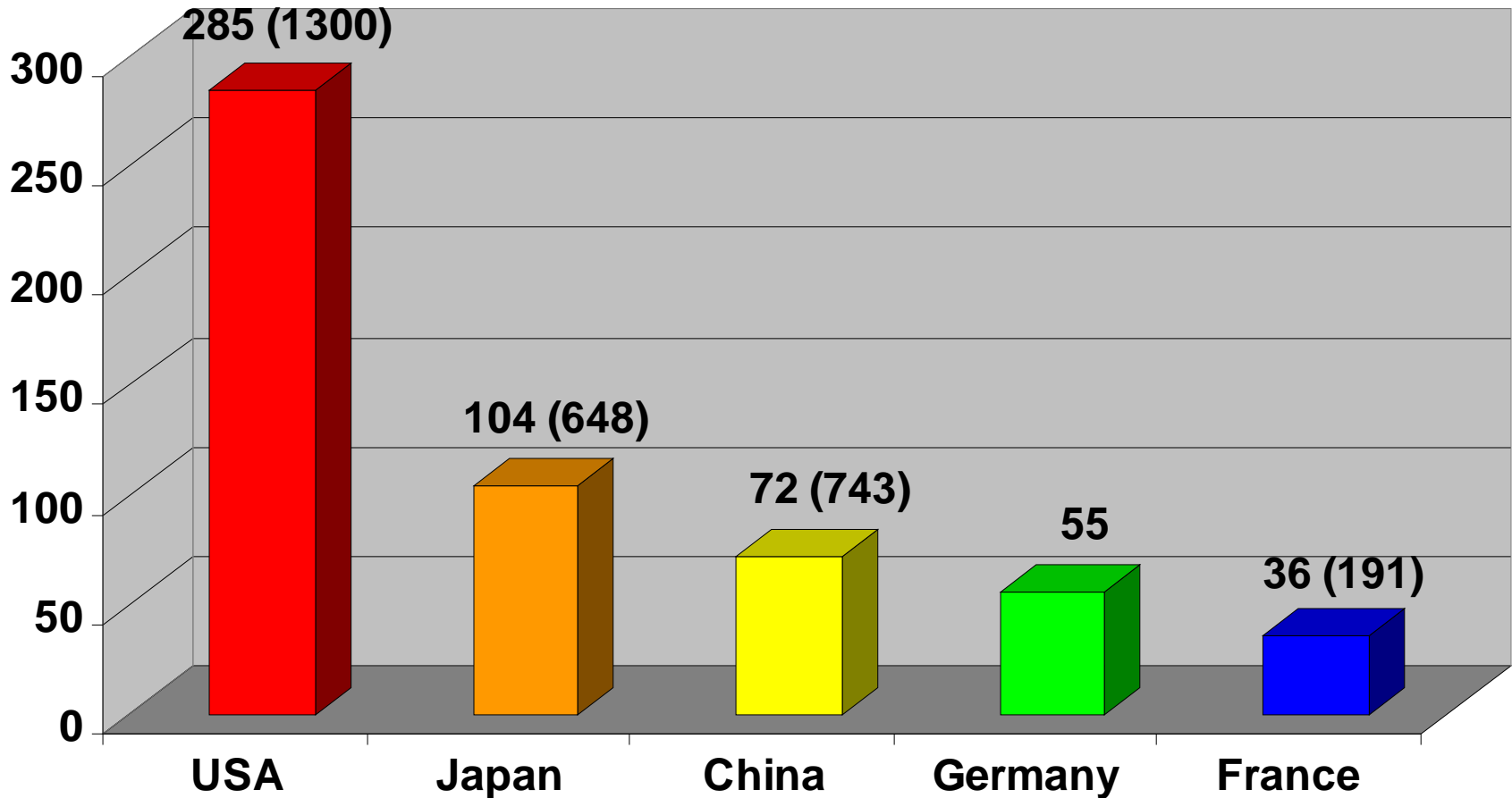
The momentous time came when the clock struck 9 a.m. Wednesday in the Chinese capital of Beijing (0100 GMT; or 9 p.m. EDT Tuesday).

With engines firing to produce well over a million pounds of liftoff thrust, the two-stage Long March 2F rocket bolted away from its shadowy launch pad at the Jiuquan launch center, located near the border between the Gansu and Inner Mongolia provinces in northern China's Gobi desert.

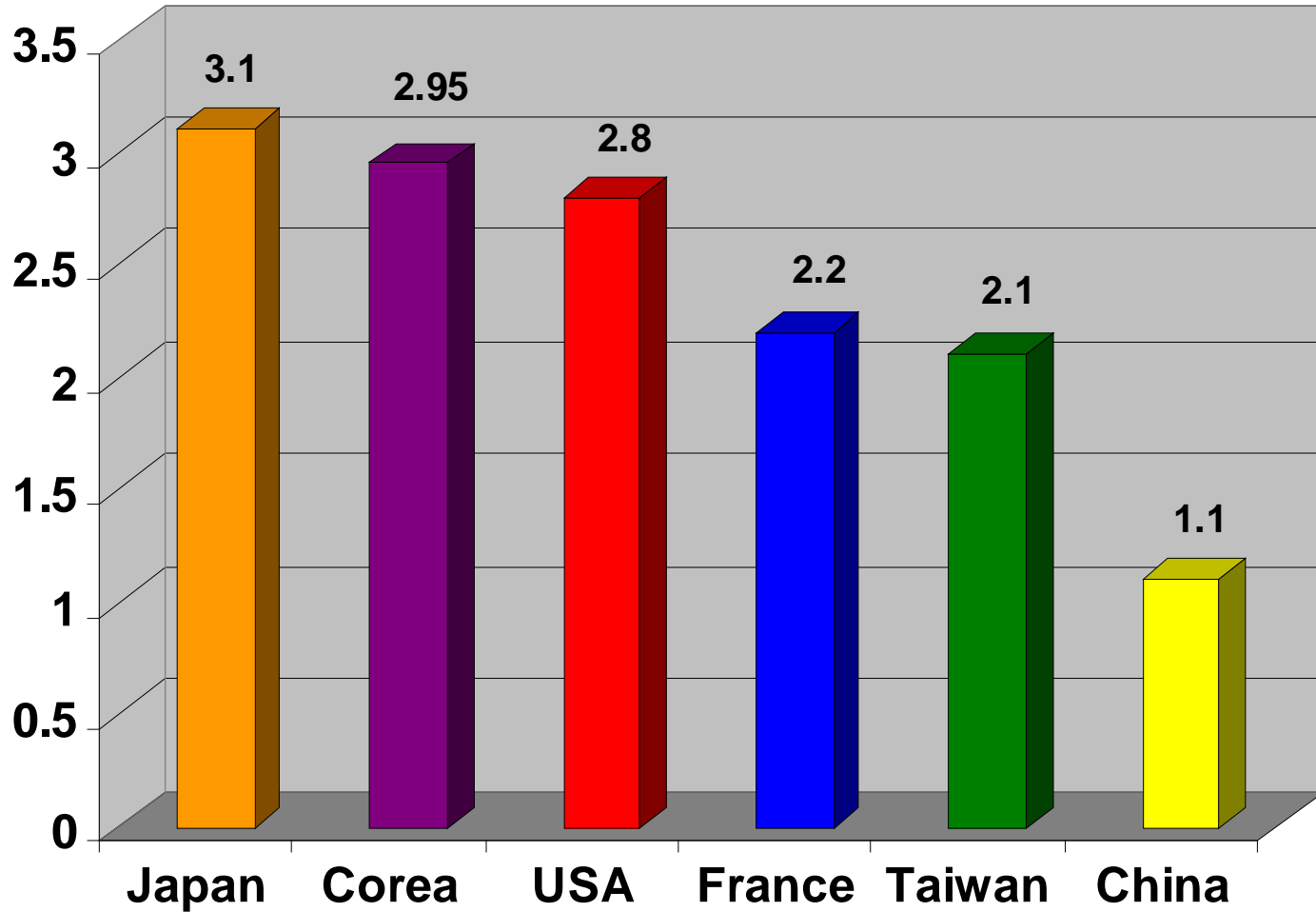


China's first human spaceflight gets underway with the successful launch of Shenzhou 5 atop a Long March 2F rocket.

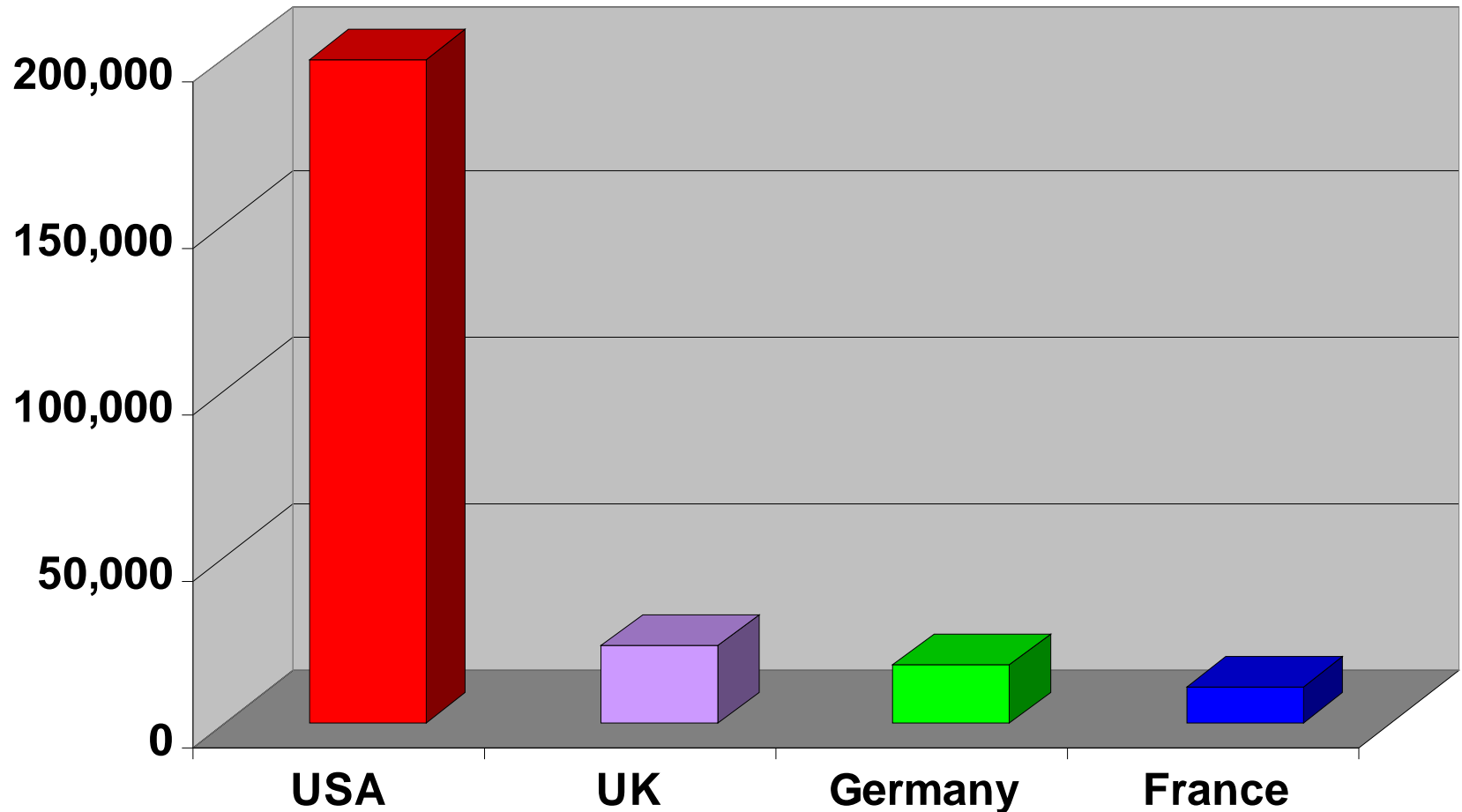
## R&D Expenditures in Billion U\$ (thousands of researchers in brackets)



## R&D / GDP %



## Chinese students abroad





**More than 1 million university graduates per year**  
**Over 500 000 scientists and engineers per year**  
**About 70 000 Master's and PhD's per year**

**Of the 400 to 500 000 Chinese who left to study abroad since 1978, about 150 000 returned, educated in the best universities.**

**Over the next few years, China's GDP will grow at a rate of 7 to 10% per year, while those of the EU and the US grow at 1 to 3% .**  
**China's ambition is to devote 3% of its GDP to innovation within about 10 years. It will then be a close second to the USA in absolute R&D expenditure.**

**Question open for debate: is this formidable acceleration an opportunity or a threat for Europe?**

**By Greg Tarr -- TWICE, 5/17/2004**

**NEW YORK— Thomson formally celebrated the send-off of its nearly finalized joint venture with China's TCL by introducing a comprehensive line of next-generation HDTVs, including 11 fully integrated "digital cable-ready" (DCR) sets.**

**The new television offerings, which will be produced by the new TCL-Thomson Electronics (TTE) company after that company begins operations in July, will include two previously announced RCA Scenium "Profiles" ultra-thin DLP rear-projection sets that measure 6.85 inches deep and offer DCR capability.**

**The high-end DLP sets are expected to begin shipping in September, and to have the industry's thinnest rear-projection cabinets. Company executives said the sets would be thin and light enough to hang on walls.**

**The new sets will serve as statement pieces for the new television technologies to emerge from the joint venture company. Under TTE, Thomson will work in tandem with TCL on television product research and development and will coordinate sales and marketing in the United States and Europe, while TCL supplements its market-leading position in China's television industry with new high-tech products, such as DLP TVs.**

**The new company "will become the world's largest manufacturer of color TVs, with an annual production capacity of 22 million sets and annual sales of 18 million sets, accounting for 11 percent of the global TV market," said Li Dongsheng (a.k.a. Tomson Li), chairman of TCL corporation.**

**If you can't beat them, join them.**

**Access to the fasted-growing TV market worldwide.**

**Access to low-cost production for commodity products.**

**Concentrate domestically on high-tech products and services.**

<http://inventors.about.com/library/inventors/blrockethistory.htm>

**The date reporting the first use of true rockets was in 1232. At this time, the Chinese and the Mongols were at war with each other. During the battle of Kai-Keng, the Chinese repelled the Mongol invaders by a barrage of "arrows of flying fire." These fire-arrows were a simple form of a solid-propellant rocket. A tube, capped at one end, contained gunpowder. The other end was left open and the tube was attached to a long stick. When the powder was ignited, the rapid burning of the powder produced fire, smoke, and gas that escaped out the open end and produced a thrust. The stick acted as a simple guidance system that kept the rocket headed in one general direction as it flew through the air...**

**Following the battle of Kai-Keng, the Mongols produced rockets of their own and may have been responsible for the spread of rockets to Europe.**



Chinese soldier launches fire-arrow



[http://inventors.about.com/library/inventors/bl\\_einstein\\_letter.htm](http://inventors.about.com/library/inventors/bl_einstein_letter.htm)

**In August 1939, Leo Szilard and fellow Hungarian physicists Eugene Wigner and Edward Teller urged Albert Einstein to sign a letter they had drafted for President Roosevelt. Einstein's letter noted that the work of Fermi and Szilard "leads me to expect that the element uranium may be turned into a new and important source of energy in the near future." President Roosevelt responded by appointing an Advisory Committee on Uranium. The Office of Scientific Research and Development was established on June 28, 1941, under the direction of Vannevar Bush, to develop atomic energy.**

**On December 6, the day before the bombing of Pearl Harbor, Roosevelt authorized the Manhattan Engineering District. This letter from Albert Einstein to President Franklin D. Roosevelt led to the Manhattan Engineering District, also known as "the Manhattan Project," a national crash program racing to develop atomic weapons before Nazi Germany. The Manhattan Project was the seed that grew into the modern national laboratory system, which today includes many non-weapons-research laboratories, such as Argonne.**



Albert Einstein  
Old Grove Rd.  
Nassau Point  
Peconic, Long Island

August 2nd, 1939

F.D. Roosevelt,  
President of the United States,  
White House  
Washington, D.C.

Sir:

Some recent work by E.Fermi and L. Szilard, which has been communicated to me in manuscript, leads me to expect that the element uranium may be turned into a new and important source of energy in the immediate future. Certain aspects of the situation which has arisen seem to call for watchfulness and, if necessary, quick action on the part of the Administration. I believe therefore that it is my duty to bring to your attention the following facts and recommendations:

In the course of the last four months it has been made probable - through the work of Joliot in France as well as Fermi and Szilard in America - that it may become possible to set up a nuclear chain reaction in a large mass of uranium, by which vast amounts of power and large quantities of new radium-like elements would be generated. Now it appears almost certain that this could be achieved in the immediate future.

This new phenomenon would also lead to the construction of bombs, and it is conceivable - though much less certain - that extremely powerful bombs of a new type may thus be constructed. A single bomb of this type, carried by boat and exploded in a port, might very well destroy the whole port together with some of the surrounding territory. However, such bombs might very well prove to be too heavy for transportation by air.

<http://inventors.about.com>

..By 1932, **Fleming** had abandoned his work on penicillin. He would have no further role in the subsequent development of this or any other antibiotic, aside from happily providing other researchers with samples of his mold. It is said that he lacked both the chemical expertise to purify penicillin and the conviction that drugs could cure serious infections. However, he did safeguard his unusual strain of *Penicillium notatum* for posterity. The baton of antibiotic development was passed to others.

..The Oxford team did not stop there. Rushing to meet the needs of World War II, they helped the government set up a network of "minifactories" for penicillin production. **Florey** also played a crucial role in galvanizing the large-scale production of penicillin by U.S. pharmaceutical companies in the early 1940s. By D-day there was enough penicillin on hand to treat every soldier who needed it. By the end of World War II, it had saved millions of lives.

<http://www.afji.com/AFJI/Mags/2002/August/industechWar.html>

**Vannevar Bush, Franklin Roosevelt's architect for wartime research, expressed science's importance in defeating fascism in World War II in his final report, "Science: The Endless Frontier": "In this war, it has become clear beyond all doubt that scientific research is absolutely essential to national security." Inventions such as radar, the digital computer, the jet engine, and antibiotics came of age during this period and played critical roles in our country's defense. Moreover, these technologies have had a major impact on our economy and civilian society.**

**For example, the first electronic digital computer, ENIAC, was developed by the Army during the war to compute ballistics tables for artillery and became the basis for every computing device we use today, from personal computers to digital watches.**

The Naval Research Laboratory is located in Washington, D.C., and at Naval Research Laboratory field sites located at Maryland Point, Blossom Point, Chesapeake Beach, Brandywine, Tilghman Island, Pax River, and Pomonkey in Maryland, and Quantico, Virginia.

NRL was commissioned in 1923 by Congress for the Department of the Navy. **The first step came in May 1915, a time when Americans were deeply worried about the great European war.** Thomas Edison, when asked by a New York Times correspondent to comment on the conflict, argued that the Nation should look to science. "The Government," he proposed in a published interview, "should maintain a great research laboratory.... In this could be developed...all the technique of military and naval progression without any vast expense." **Secretary of the Navy Josephus Daniels seized the opportunity created by Edison's public comments to enlist Edison's support.** He agreed to serve as the head of a new body of civilian experts - the Naval Consulting Board - to advise the Navy on science and technology. The Board's most ambitious plan was the creation of a modern research facility for the Navy. Congress allocated \$1.5 million for the institution in 1916, but wartime delays and disagreements within the Naval Consulting Board postponed construction until 1920.

**The negative side:**

**humans can be extraordinarily innovative when it comes to making war.**

**The positive side:**

**(fundamental) scientists are capable of highly effective practical innovation when faced with a sufficiently motivating challenge**