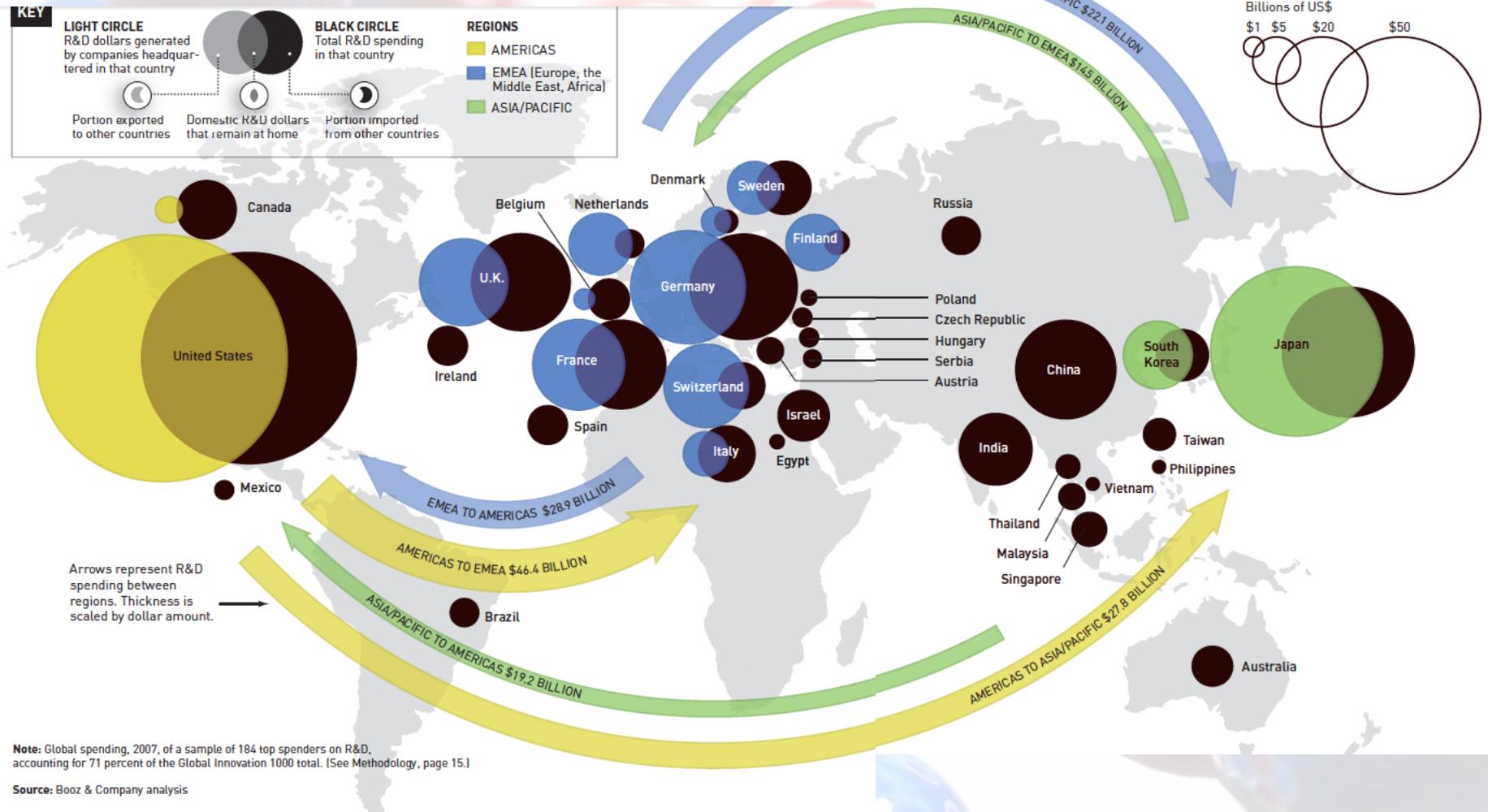




INTERNATIONAL
PETROCHEMICAL
TECHNOLOGIES sd

RESEARCH AND TECHNOLOGY

as business has become increasingly global, so too has corporate spending in R&D. flows of the top R&D spenders



INTRODUCTION

some numbers of the R&D

Top R&D Generators		Top R&D Users		Top sole R&D importers	
US	146 bil (US \$)	US	105.8 bil (US \$)	China	24.7bil (US \$)
JP	71.6	JP	40.4	India	13
Germany	30.7	Germany	27.8	Israel	6.5
France	19.7	China	24.8	Australia	4.3
UK	18.1	UK	23.3	Spain	4.0

Statistic at 2008

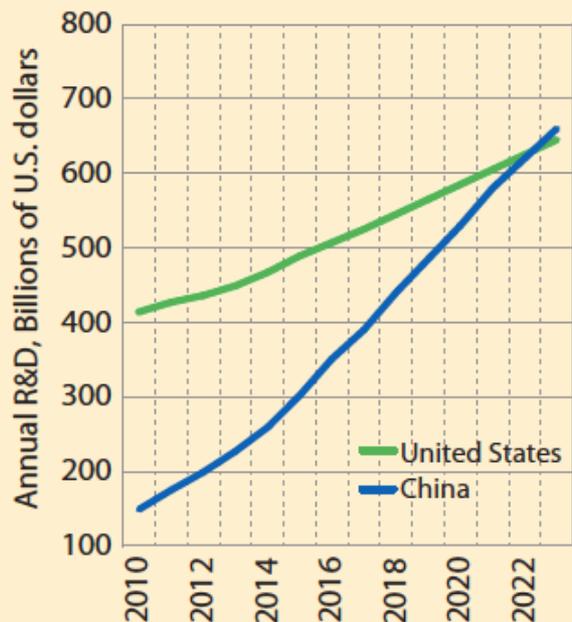
GLOBAL R&D SPENDING FORESCAST

	2011 GERD PPP Billion US \$	2011 ReD as % of GDP	2012 GERD PPP Billion US \$	2012 ReD as % of GDP	2013 GERD PPP BillionUS \$	2013 ReD as % of GDP
US	412	2.7	418	2.68	423	2.66
JP	156	3.5	159	3.48	162	3.48
China	177	1.55	197	1.60	220	1.65
EU	343	1.87	347	1.88	349	1.88

GERD, Gross Expenditures on ReD, PPP, Purchasing Power Parity, GDP, Gross domestic product

INTRODUCTION

U.S. - China Annual R&D Spending



Source: Battelle, *R&D Magazine*

While China's economy has steadily grown by 9% to 10% over the past several years, its R&D investments have increased annually by about seven times the annual percent increase in the U.S. Several years ago, China announced a goal of increasing its R&D as a percent of GDP to 2.5% by 2020. However, its GDP is growing sufficiently fast that even with impressive increases in the rate of R&D spending, investments presently lag the goals that China had set forth.

Expected 2014 R&D Changes



Source: Battelle, *R&D Magazine* Survey

China has increased its annual output of scientific papers to more than 120,000 annually, second only to the U.S. with its 340,000 annual publications.

"Commercialization funding is a natural part of the funding continuum that begins with investments in basic research and leads to the economic impact of innovation"

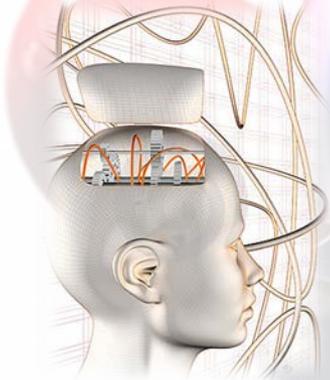
In the 2012 China's Ministry of Finance announced that it had allocated about \$125 million to promote the application of China's R&D results into the commercial sector. The goals were to accelerate the transfer of S&T achievements into production, promote corporate technology innovation, and speed up economic reforms.

Research is the engine of any company that is willing to work in the technological field, especially when the never-ceasing search for innovation spurs on the development of an industrial company.

Research is the projection towards the future of a company willing to grow, either for innovation purposes by marketing new products, or for improving processes and technologies that already exist, or even conceiving new know-how due to patents that are already applied.

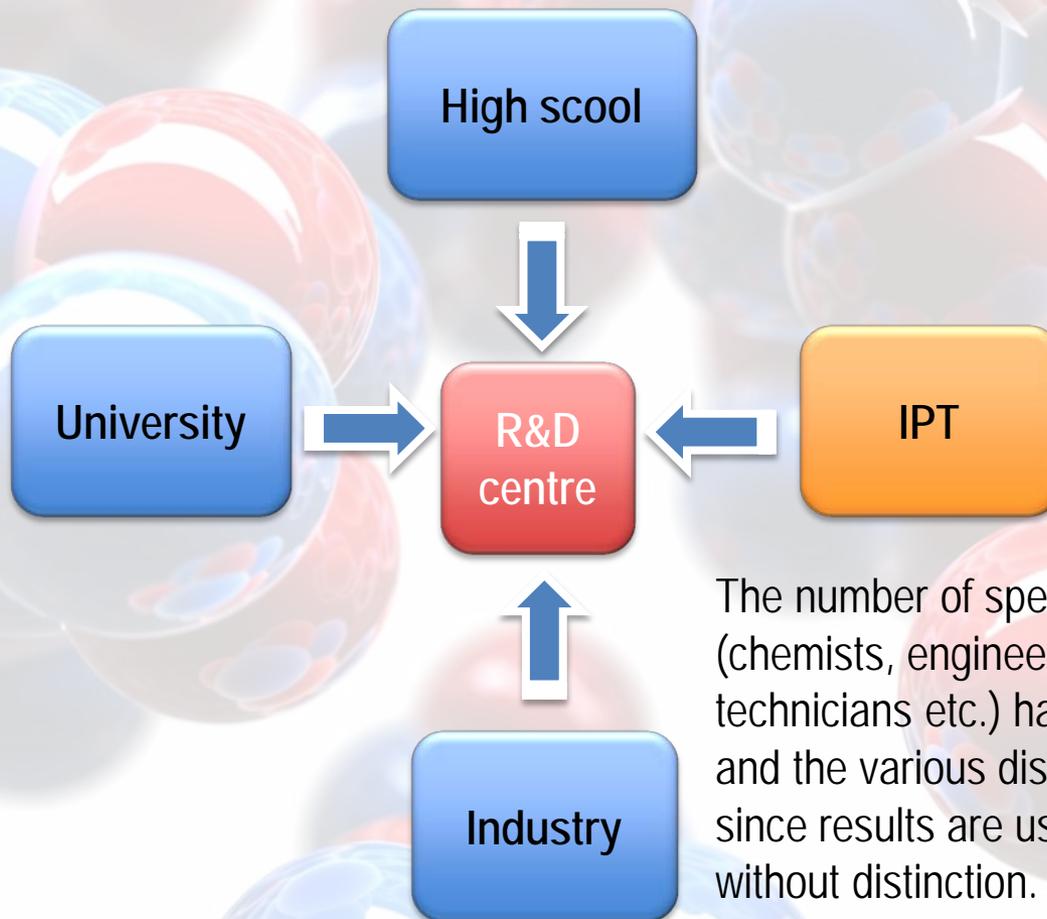
Research is mainly based, supported and spurred by the expertise and professional experience of researchers, the suitably-equipped operating structure and test systems, and finally ideas.

A Research Centre has to be based on organization, equipment availability and personnel that make an extra value out of flexibility and versatility, together with a perfect integration between disciplines and the continuous striving for the right market.



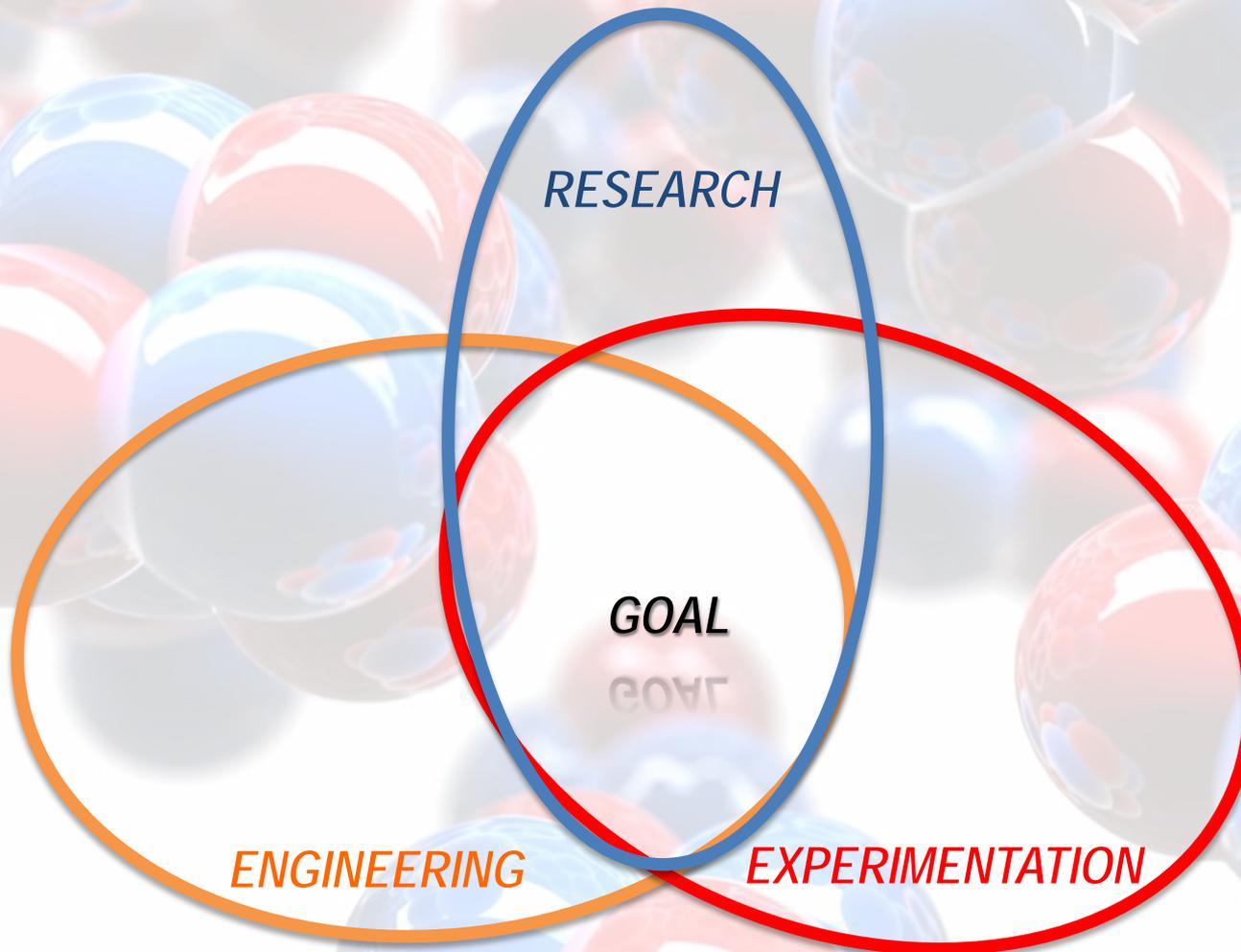
The engine of the research is the people...and the research itself

Staff expertise and experience, level of education of the young people, and operational organization represent a **must** feature that can make a difference in a Research Centre.

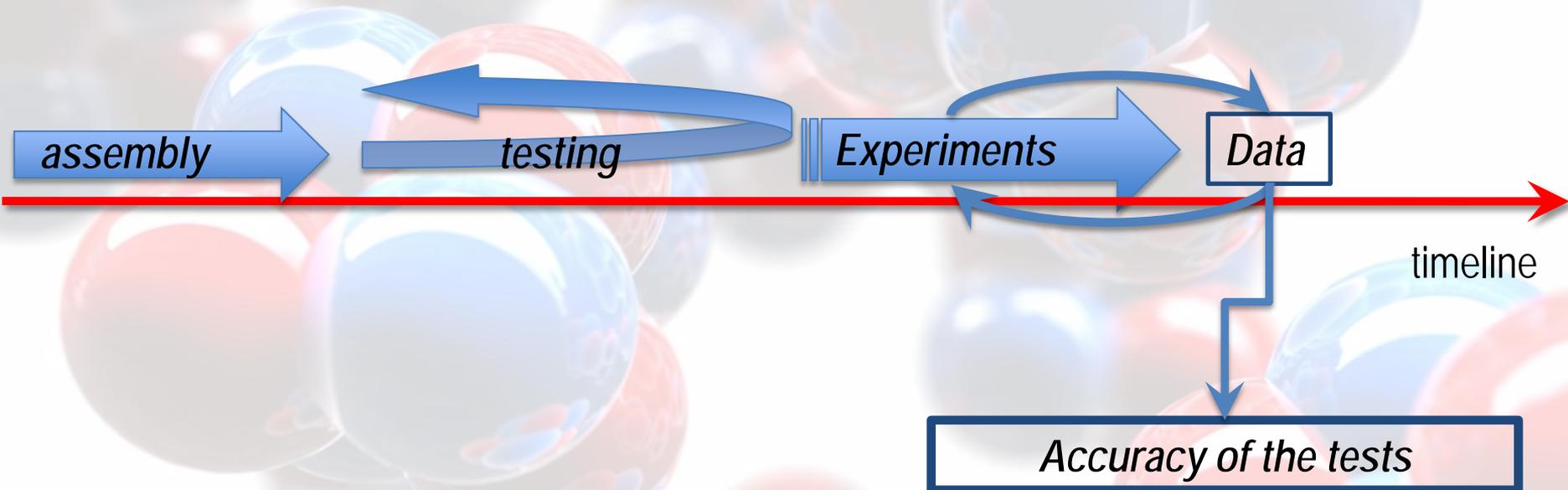


The number of specialized people (chemists, engineers, physicists, technicians etc.) has to be balanced and the various disciplines shall mix, since results are usually achieved jointly without distinction.

The applied research – Key for the technologic innovation



Planning of the activity



RESEARCH PROJECTS

Main aim of the projects:

- Foresee the market needs and develop the innovative future technologies
- Update and revamp existing technologies
- Issue new patents

IPT
Framework
program



PROGRAM PHASES

<i>Phase 1</i>	Bibliography research (scientific and patent) aimed to Research project(s) definition and scheduling
<i>Phase 2</i>	Lab-scale research for experimental tests aimed to the acquisition of the basic technological data
<i>Phase 3</i>	Pilot plant design and realization
<i>Phase 4</i>	Pilot-scale research for experimental tests aimed to the acquisition of the process data for industrialisation