

ICT Industrial Research, Knowledge Transfer and Innovation – Barriers, Trends and Needs

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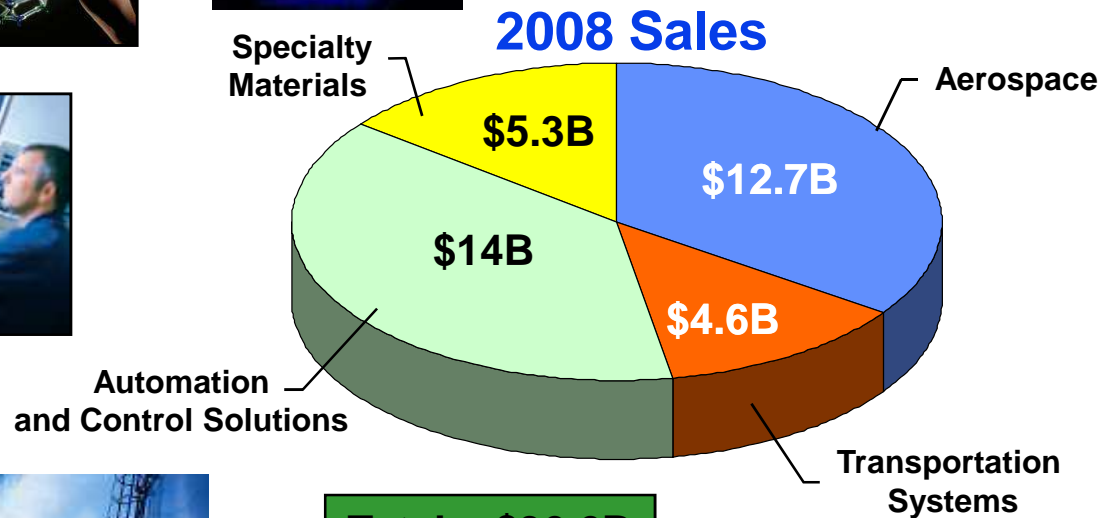
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National Executive Czech Republic
Honeywell spol. s r.o.

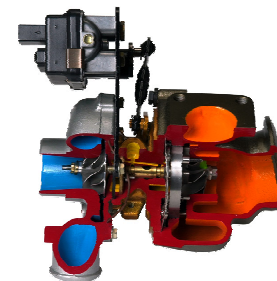
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Honeywell's Businesses

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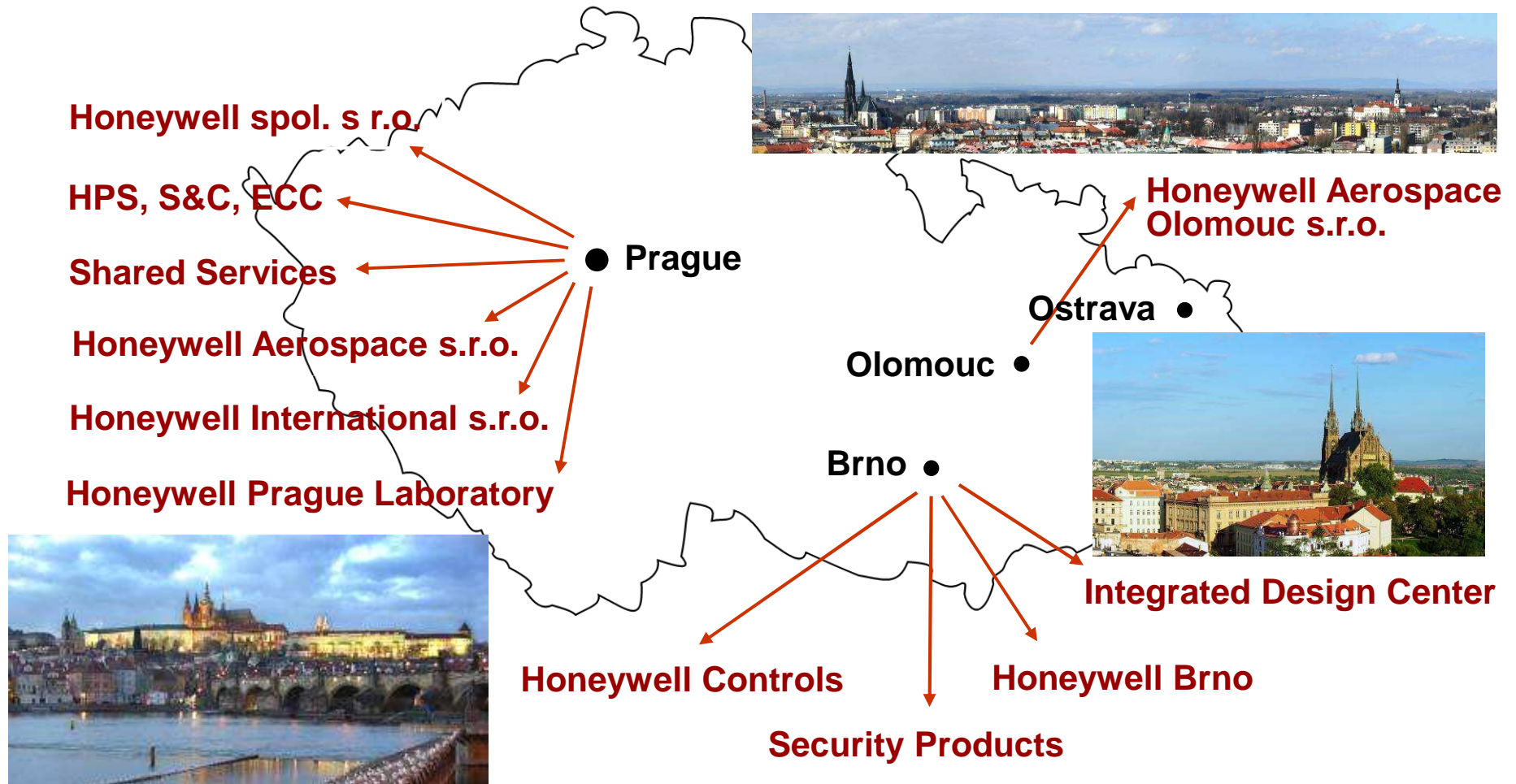


Total = \$36.6B



Diverse Businesses, Technologies and Products

Honeywell in Czech Republic



Czech Republic: Over 2,800 Honeywell Employees

Honeywell History in Czech Republic

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- **Sales & Distribution**

- 1962 – Sales representation (Austrian branch)
- 1991 – Honeywell Service & Engineering s.r.o.
- 1995 – Honeywell spol. s r.o.



- **Research & Development**

- 1993 – Prague Technology Center (today's Prague Laboratory)
- 2003 – Global Design Center in Brno
- 2008 – Turbo Test Lab opens in Brno



- **Manufacturing Units**

- 2001 – Ademco Brno
- 2002 – Mora Aerospace a.s.
- 2002 – Honeywell Controls s.r.o.
- 2003 – Security Products (Olympo)
- 2008 – Honeywell Aerospace Olomouc s.r.o.



- **Support & Shared Services**

- 2004 – Global Credit and Treasury Services
- 2004 – Global Business Services
- 2006 – Aero Global Business Center
- 2007 – Honeywell International s.r.o. – Aero operations umbrella

Czech Republic – Technology & Manufacturing Hub

Reasons to Invest in CZ

- **Initial conditions**
 - **Globalization** of R&D and innovation
 - **Sustainable growth** in highly competitive environment
 - **Cost efficiency** of manufacturing and technology advancement
 - **Enhancement** of company presence in the region
- **Enablers**
 - Highly qualified, effective and **innovative technical workforce**
 - High standard of **technical education**
 - Long and **successful history** of industrial development
 - Political and **economic stability**, cultural proximity
 - Strategic **geographical location** and developed infrastructure
 - Appropriate **business** and investment **environment**
 - Investment support and incentives (CzechInvest role)
 - Positive reference of other investors
 - **Hands-on experience** with Honeywell Prague Laboratory

Technology Absorption And Innovation Prone

Drivers and Expectations

- **Why the Czech Republic?**
 - Qualified technically excellent workforce
 - Tradition of technical education and creativity
 - Cultural proximity
 - Geographical position and developed infrastructure
 - Business friendly and stable environment
- **What is expected:**
 - Availability of suitable workforce ready to cope with innovative and competitive environment
 - Flexibility and invention of our employees
 - Readiness to enhance personal qualification and skills
 - Communication, personal and managerial proficiency
 - Ability to efficiently cooperate in global environment
- **What is offered:**
 - Employment at global technological corporation
 - Mastering and use of up-to-date tools and methodologies
 - Career opportunity and growth

Mobility – Flexibility – Passion – Performance

University Cooperation Strategy

What Is Expected

- **Company:** Influence of basic/special curricula based on market needs and technology developments; recruitment; joint R&D activities
- **University:** Support/sponsorship from strong business partners; joint R&D activities; delivery of basic/special courses/degrees (e.g. customized courses/certifications to companies)

What Makes Difference

- Contacts, sponsorship, working relationship, trust building
- Recruitment, university job fairs, company open days, etc.
- **Joint projects, R&D activities**, consortia, spin-offs, start-ups
- Personal/staffing relationship, exchange stays, internships
- **Long-term** relationship, **champions** on both sides essential
- Selective and flexible approach for large companies and SMEs

Long-Term Relations and Champions Crucial

Recent Development with Universities

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- **Membership in Faculty Staff**
 - Full Professorship in EE at CTU (Honeywell Senior Fellow – since 1995)
- **Membership in University Bodies**
 - Scientific Board of BUT (National Executive – since 2006)
 - Board of Trustees of CTU (National Executive – since 2007)
- **Honeywell-Nobel Initiative**
 - Pilot event at CTU, 2006, with **Nobel Laureate Horst Störmer**
 - Follow-up event at BUT, 2008, with **Nobel Laureate Alan Heeger**
 - Recent event at CTU, 2009, with **Nobel Laureate Theodor Hänsch**
- **Honeywell Innovators Scholarship Program** for students of CTU and BUT
- **CTU Media Lab Foundation**
 - Support students' innovative ideas and promote engineering career recognition (National Executive since 2006)

New Format of University Cooperation Strategy

Information & Communication Technologies

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- **Motto: (Cordis webpage)**
 - *Information and Communication Technologies (ICT) are critical to improve the competitiveness of European industry and to meet the demands of its society and economy.*
- **ICTs have a catalytic impact in three key areas:**
 - *Productivity and innovation*, by facilitating creativity and management
 - Modernisation of *public services*, such as health, education and transport
 - Advances in *science and technology*, by supporting cooperation and access to information
- **ICT is a qualitative generic change, by fostering:**
 - Exponential growth of **performance**
 - Exponential drop of **price**
- **Public Policy & the ICT Industry**
 - Yesterday: *“Policy follows ICT Innovation”*
 - Today: *“Policy enables ICT Innovation”*

Change of ICT Paradigms

US & Europe Economic Stimulus

US Economic Stimulus

- 21st century Education (STEM)
- Universal access to ICT (Digital Divide)
- R&D Investments (Direct & Indirect)
- E-Government (lead by example)
- Eco-Computing
- E-Health
- Smart Grid & Alternative Energy Sources

EU Ten Actions for Recovery

- Employment support
- Create labour demand
- Enhanced access to financing for business
- Promote entrepreneurship & reduce administrative burdens
- Step up investments in infrastructure
- Improve buildings' energy efficiency
- Promote "green products"
- Increase investment in R&D, Innovation, and Education
- Develop clean technology for cars and construction
- High speed Internet for all

Trans-Atlantic Available ICT Opportunities

- **ICT Environment**

- Wide and many-sided collection of activities
- Strong influence on any adjacent area
- Fundamental and applied research battlefield (in peaceful sense)
- Solid and innovation prone framework for university-industry cooperation (public private partnership)
- Different strategy setup for university (publish & promote) and private entity (own & exploit)

- **Industrial Research**

- Applied research (mostly) – with shorter planning horizon
- Focused area of interest, limited resources (on-time, on-budget)
- Return of investment (ROI) heavily counts
- Intellectual property aspects (ownership, licensing)
- Break even conditions/criteria for cooperation

ICT – Melting Pot for Technology Innovation

Partners' Dilemma

- **Industrial Partner Dilemma**

- What is received for my direct investment (buy-in, cost share, overhead)?
- Is intellectual property agenda properly covered?
- Who will own the results and to what extent?
- Should I wait/stand-by and buy the mature stuff at later date?
- In total, does it make sense to participate?

- **University Partner Dilemma**

- Is my academic freedom recognized and sustained?
- Is the proposed compensation fair enough?
- Are the cooperation conditions too strict?
- Is such technology transfer just bringing additional overhead?

EITHER University OR Industry Partner Role Viable!

Knowledge Transfer vs. Innovation

- **Knowledge Transfer**

- Interaction process to facilitate and foster innovation
- Structured process orientation from University partner to Industrial partner (from knowledge to practical needs) and vice versa
- Introduced instruments supportive of knowledge transfer in desired fields and areas (R&D policy, Lisbon strategy, EIT)
- Technology Transfer Centers

- **Innovation Environment**

- Formal & informal interaction of University and Industrial partners exists with reasonably high intensity
- There exist a motivation for innovation which should have a competitive character
- Created and nurtured innovation prone environment (R&D policy, innovation policy, incentives, etc.)
- Innovation Centers

Information – Knowledge – Innovation

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