



Russian IT: Human Capital

February, 2006



Auriga – Russian Software Engineering Expertise – Worldwide
Since 1990

Russian IT: Labor Pool Highlights

- Russia's **adult literacy rate (98.7%)** - one of the highest in the world
- Close links with **European engineering culture**
- Great emphasis on **science and technology in education**
- **World-class R&D traditions**, supported by the large number of scientists, mathematicians, engineers, and other IT specialists
- Genetic memory of **handling complicated R&D projects**; inherent creativity and ability for engineering innovations
- Sustainable Russian **IT workforce growth** over the past years: the number of university graduates in IT-related fields amounted to over 225,000 people in 2004, up 11.2% from the 2002-2003 academic year
- **Growing maturity** of the Russian IT labor pool: enhanced project management experience & capabilities
- The A.T. Kearney index for Russia's IT **people and skills availability** rose to **1.3 in 2005** from **0.9 in 2004**
- Russia's **huge intellectual resource** presents an attractive investment opportunity

Sources: U.S. Department of State, Bureau of European and Eurasian Affairs; A.T. Kearney; Russian IT Graduates: Statistical Analysis and Research, Auriga, Inc; Development News Media Center, The World Bank Group

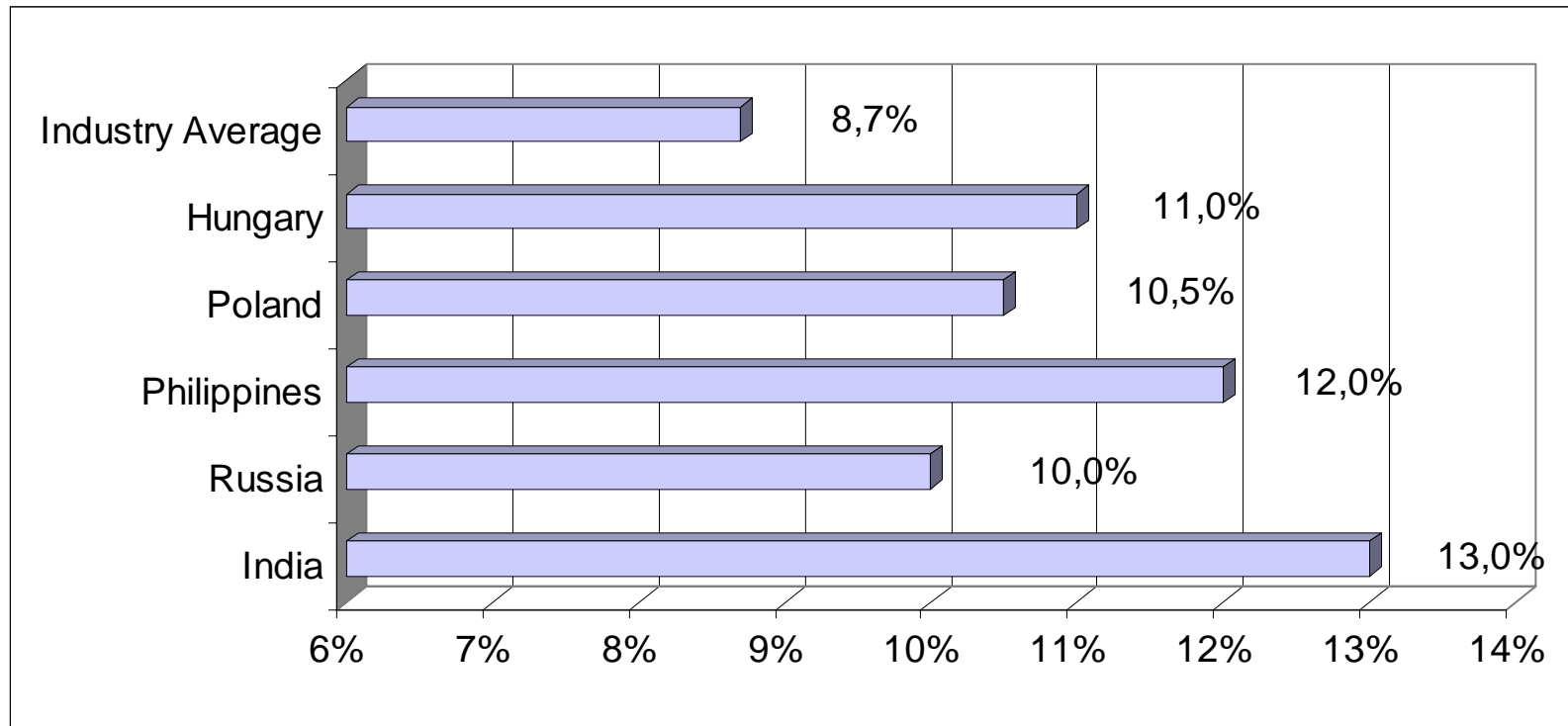


Russian IT Workforce: Skills & Training

Country	Skills & Training
Russia	A+
India	A
Israel	A
China	B
Ireland	B
Singapore	B
Malaysia	C
Mexico	C
Philippines	C

Sources: PRTM (Pittiglio Rabin Todd McGrath), Ernst&Young

2004 Salaries Year-Over-Year Growth Rates for IT Professionals – 1



Source: *neolT Research*

2004 Salaries Year-Over-Year Growth Rates for IT Professionals – 2

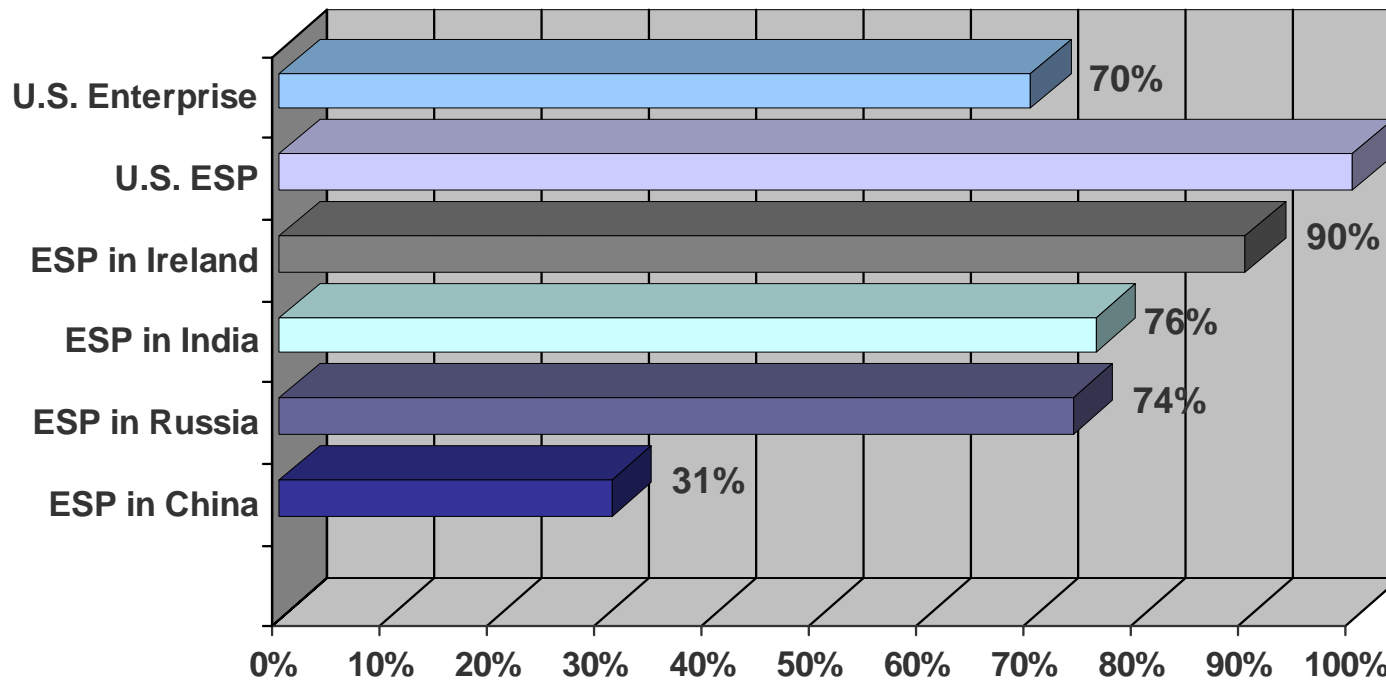
- In 2004, **IT salaries in India experienced the most significant growth** compared to all other geographic markets. Industry maturity, increasing competition, stable demand were the key drivers behind this increase
- Constraints in the supply of IT labor resources fueled the **sharp salary growth in the Philippines**
- **Poland and Hungary** witnessed **above-average salary appreciations** due to the countries' entrance into the EU and resource supply constraints
- **Salary levels for Russian IT professionals are growing but will not neutralize the salary differential** in the short to medium term.
- Russia offers tremendous savings potential for American and European organizations, specially in the IT product research and development area. This saving potential is available primarily because **Russia has a large supply of low-cost labor resources with engineering and software talent`**

Source: neoIT Research



Skills Effectiveness

Programming skills, project management skills

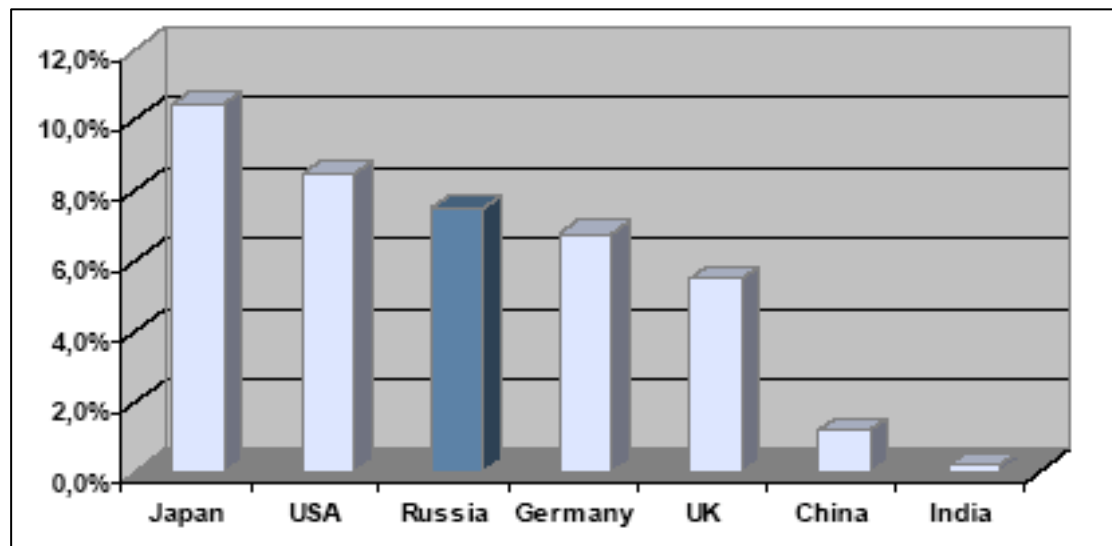


*ESP – External Service Provider

Source: Gartner

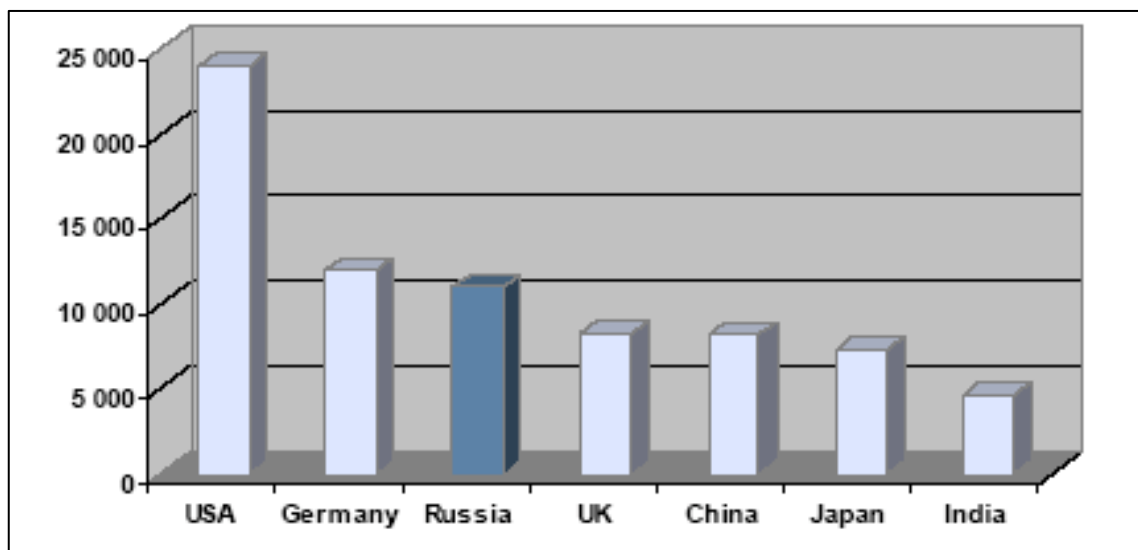
Number of Researchers

% of total employment



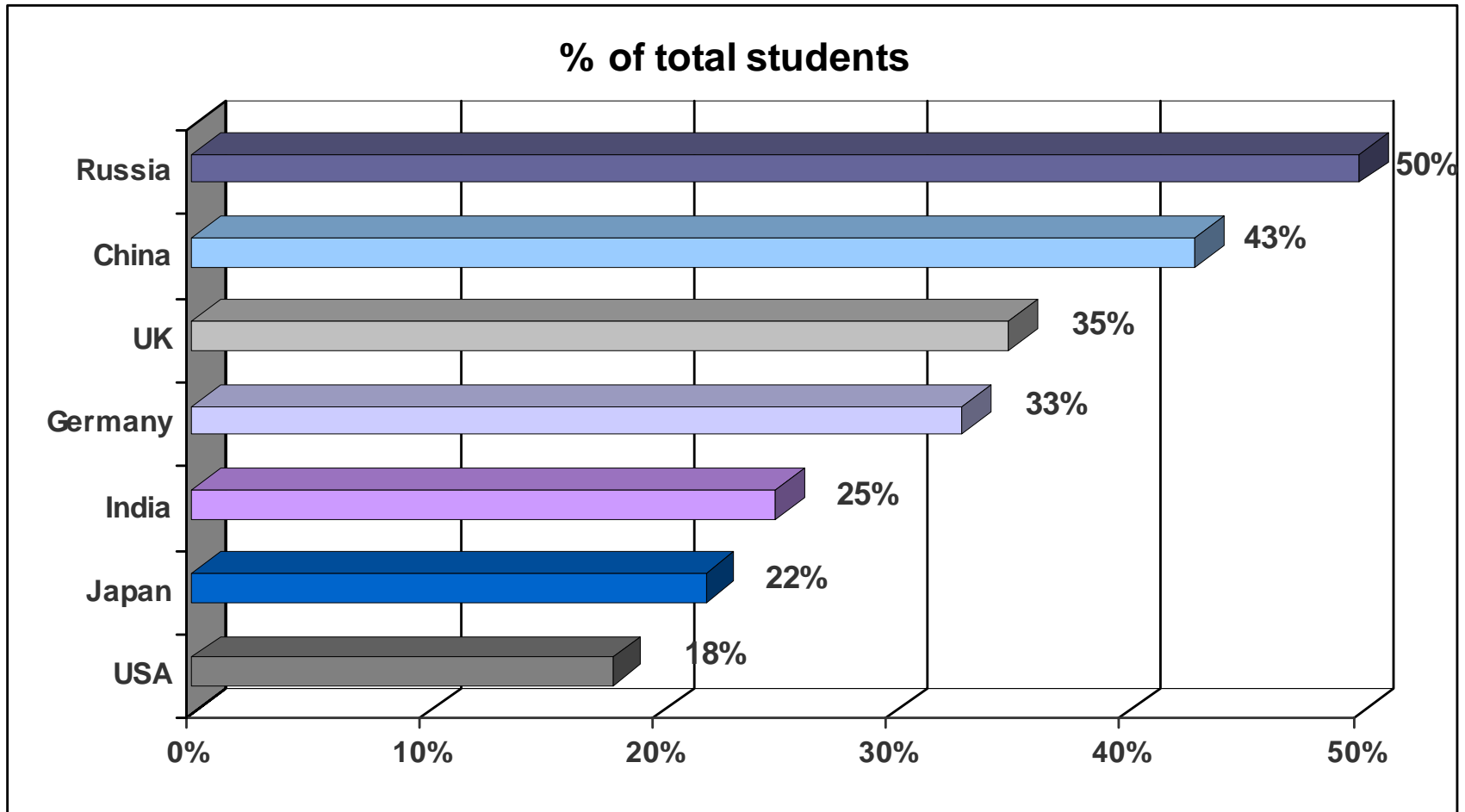
Source: OECD (Organisation for Economic Co-operation and Development)

Earned Science and Engineering Doctorates



Source: Goldman Sachs

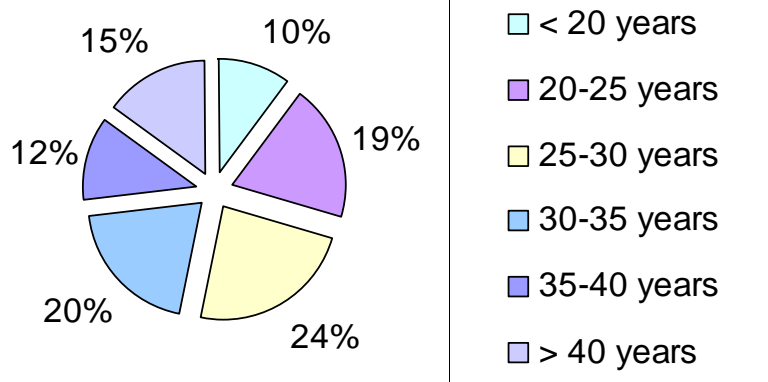
Science Students



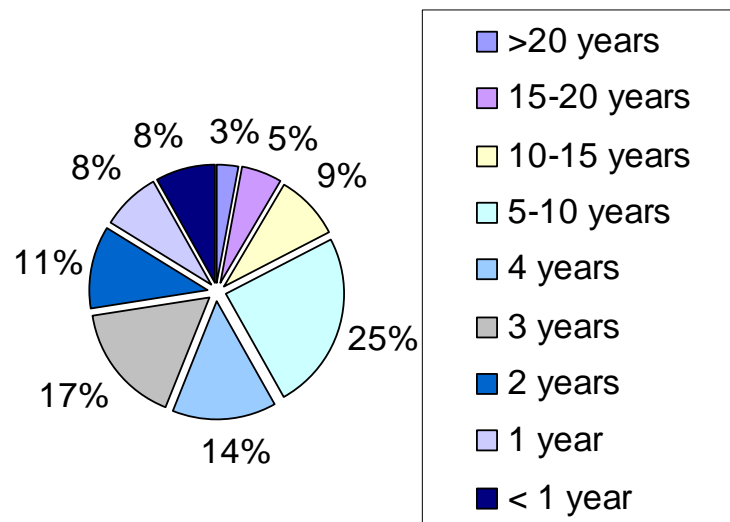
Sources: UNESCO; Federal Statistical Office of Germany

Russian IT Workforce: Age and IT Experience

Employees' Age



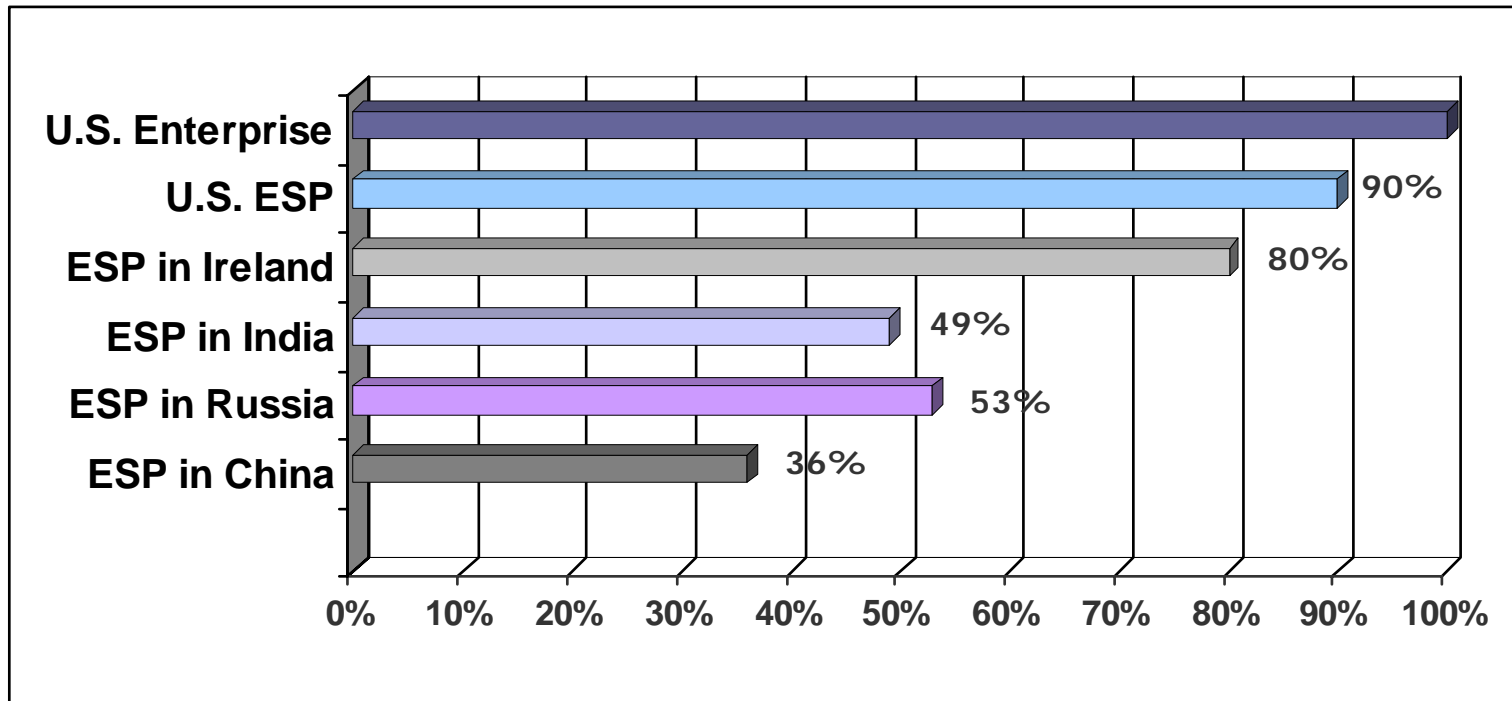
Employees' IT Experience



Source: Auriga Survey 2005

Communication Factor

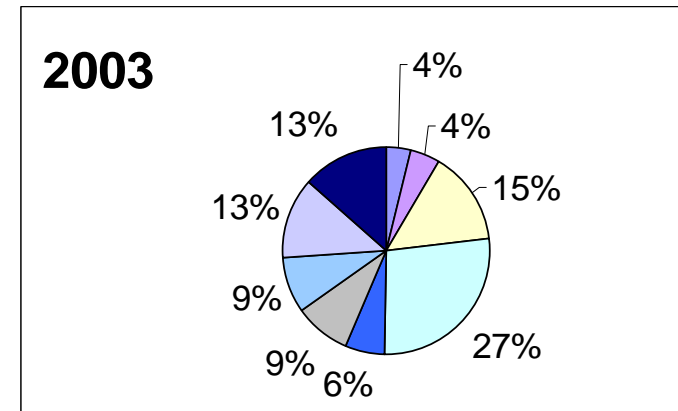
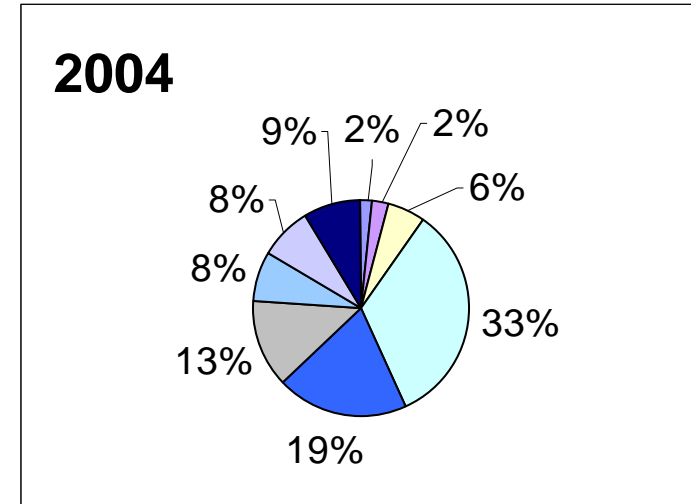
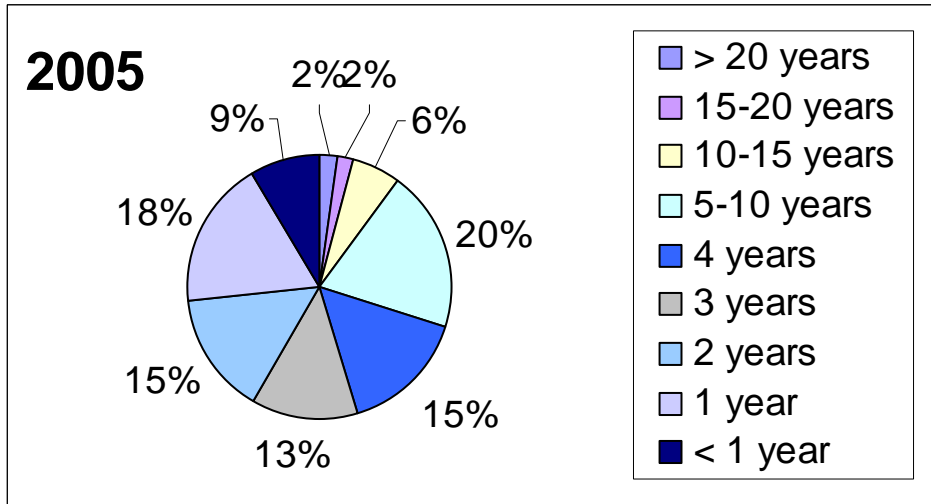
language skills, communication infrastructure, cultural similarity



**ESP – External Service Provider*

Source: Gartner

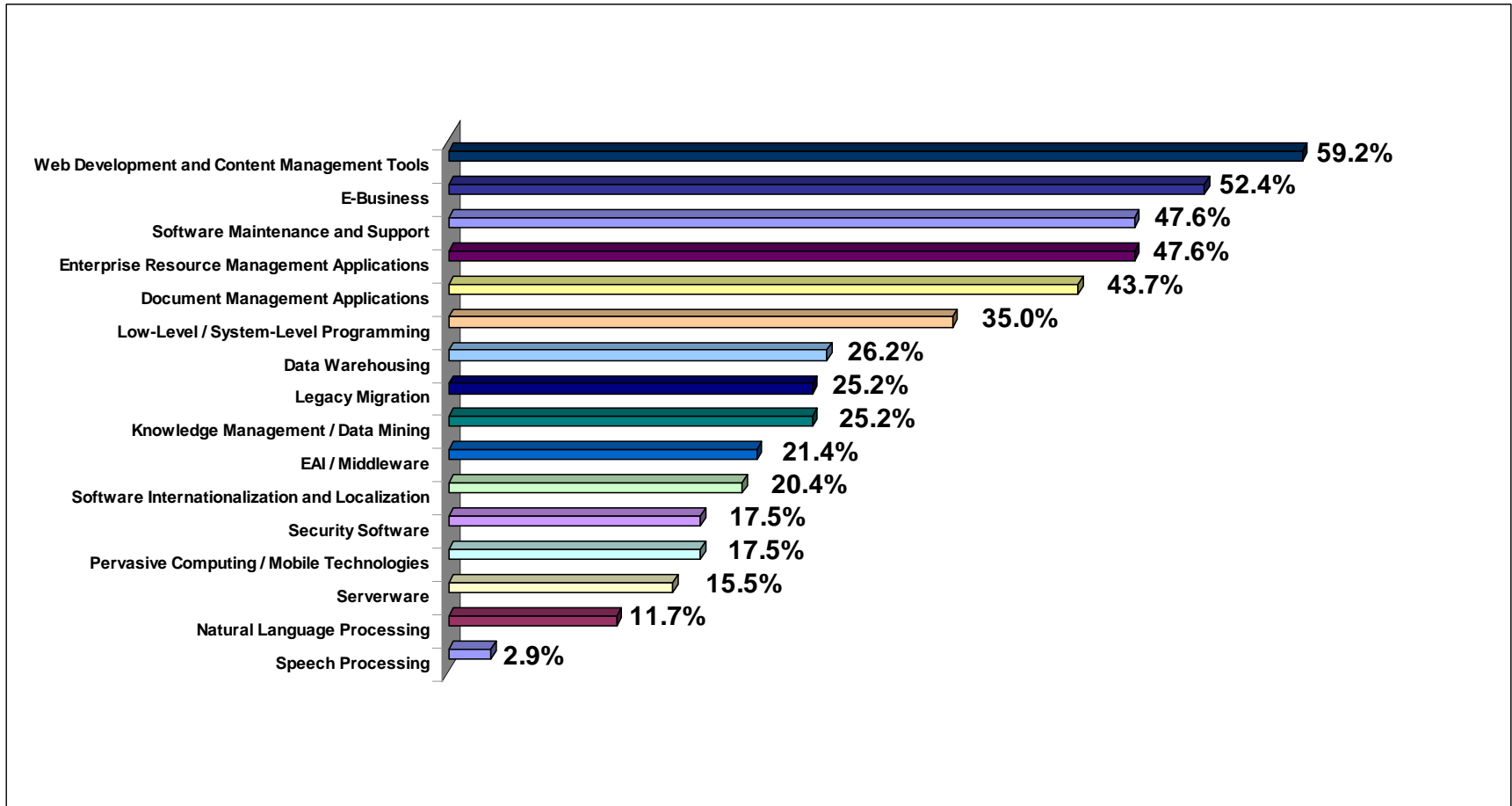
Russian IT Workforce: Experience-Related Hiring Preferences



Source: Auriga Survey 2005

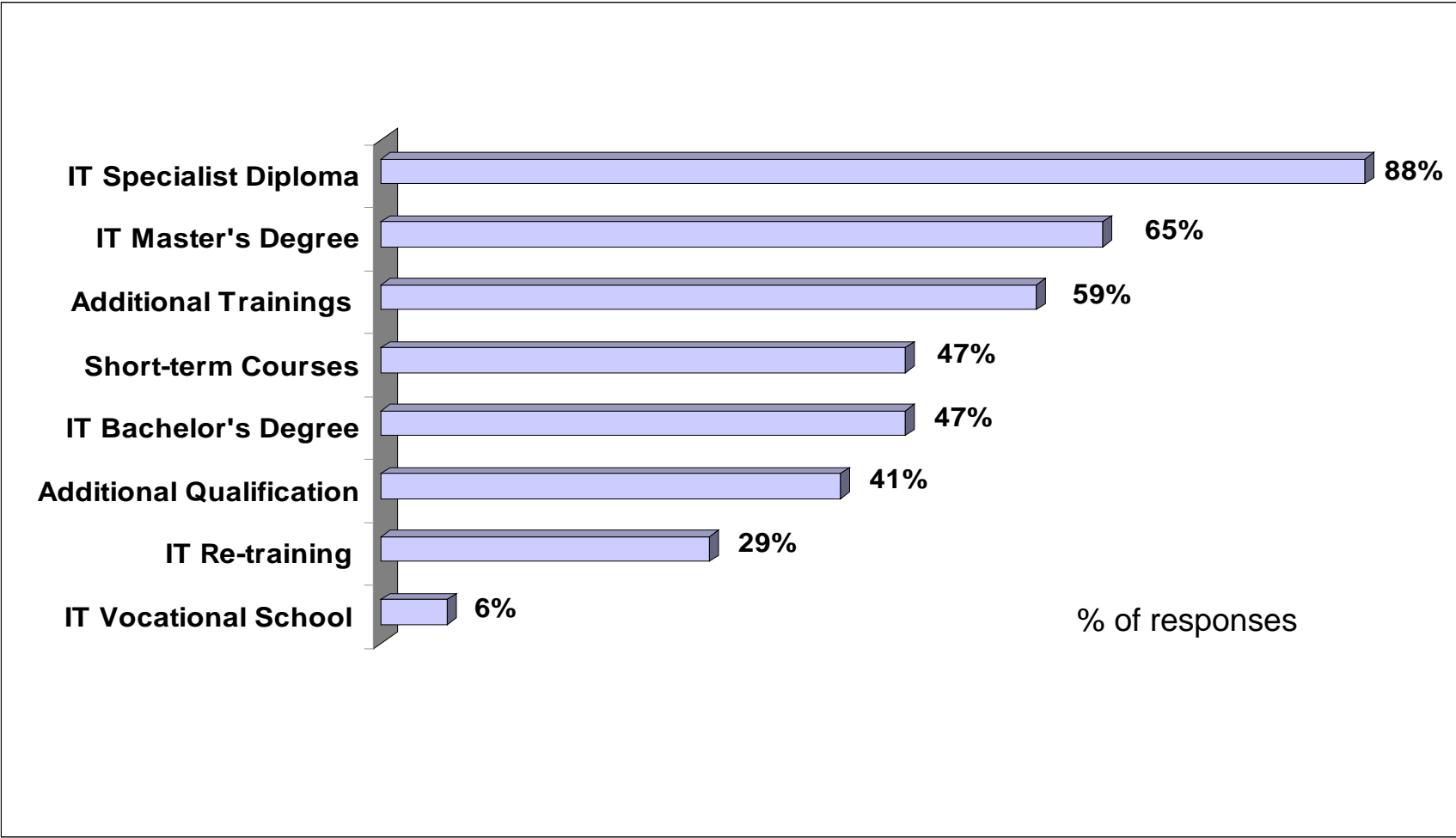
*The industry attrition rate varies from **5% to 16%**.*

Russian IT Workforce: Areas of Expertise



Source: RUSSOFT

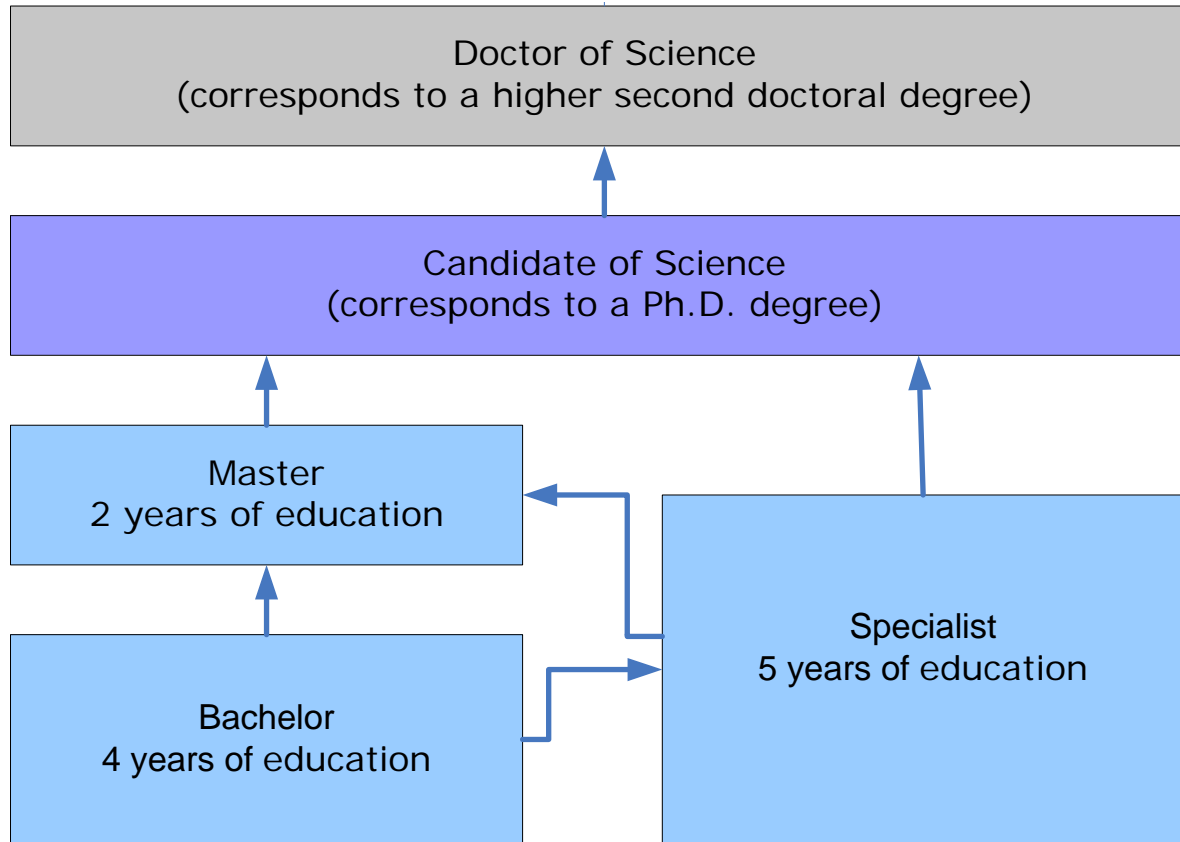
Russian IT Workforce: Qualification



Source: Kominfo Consulting

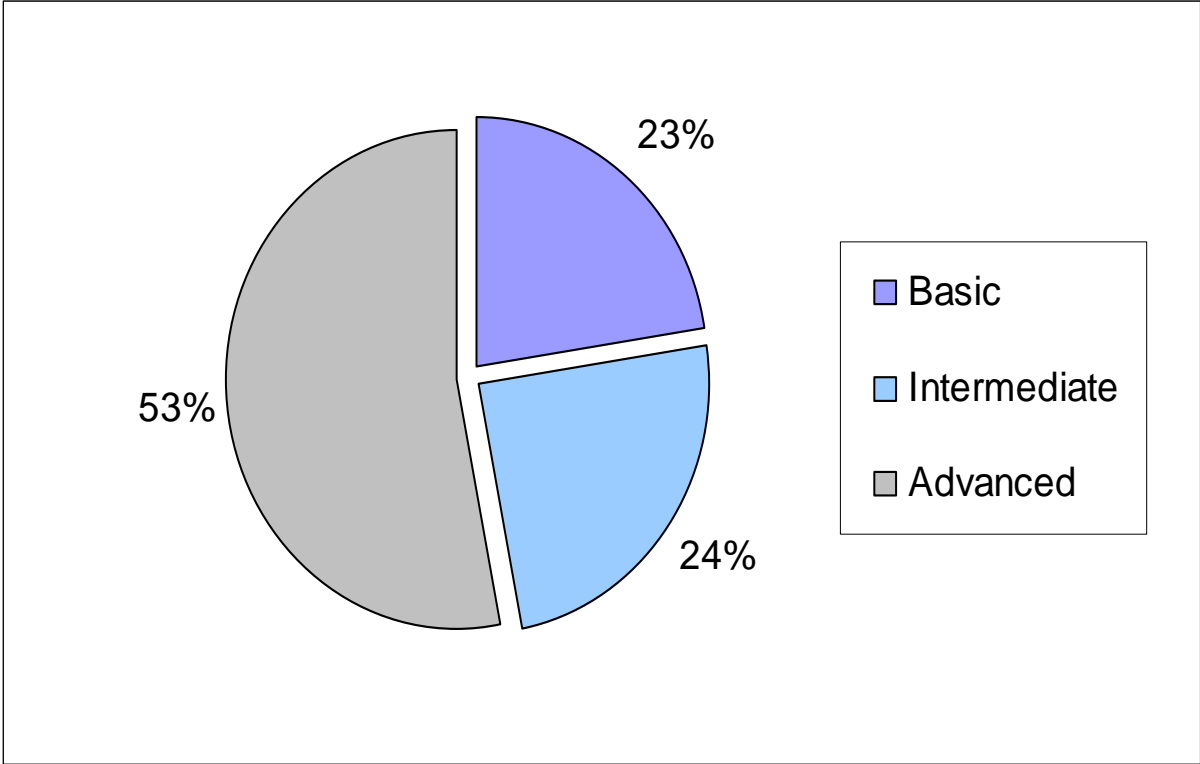


Russia's Higher Education System



Source: Ministry of General and Professional Education of the Russian Federation

Russian IT: English Proficiency



Source: Auriga Survey 2005



Annual ACM International Collegiate Programming Contests

- Year 2005: 71 countries, 1582 Universities, 4109 teams, 78 Finalist teams
- Russia in ACM Contest Finals:
 - 2005:
 - 2. Moscow State University
 - 3. St Petersburg Institute of Fine Mechanics and Optics
 - 2004:
 - 1. St. Petersburg Institute of Fine Mechanics and Optics
 - 3. Belarusian State University
 - 2003:
 - 2. Moscow State University
 - 3. St Petersburg Institute of Fine Mechanics and Optics
 - 2001:
 - 1. St. Petersburg State University
 - 3. St. Petersburg Institute of Fine Mechanics and Optics
 - 2000:
 - 1. St. Petersburg State University



Russia's IT Educational Landscape

- 68,126 graduated in 2004 with **Master's degrees in Computer Science** or with software engineering majors, up 6.9% from 2003
- 76,435 graduated in 2004 with **degrees in various engineering fields**, and 81,270 graduated with degrees in Industrial Economics & Management with advanced academic training in Computer Science allowing them to enter the IT workforce
- 77.4% of Russian software companies employ **PhDs**

Sources: Auriga Research; Global Offshore Associates Limited



Fresh IT Labor Supply in Russia & India

Russia

Russia's New IT Labor	2002 - 2003	2003 - 2004
Number of IT engineering graduates	42,138	45,994
Number of math and physics graduates	21,577	22,132
Number of non-IT engineering graduates capable of entering IT workforce	69,072	76,435
Number of graduates (other disciplines) capable of entering IT workforce	70,631	81,270
Total Fresh IT Labor Supply	203,418	225,831

Source: Auriga Research

India

India IT Labor Supply / Software Industry	2001-02	2002-03	2003-04	2004-05	2005-06
Total Number of IT professionals	115,241	126,644	139,839	146,179	158,176
Engineering IT graduates (Degree: 4-year course)	71,066	81,423	93,968	99,162	109,983
Engineering IT graduates (Diploma: 3-year course)	44,175	45,221	45,871	47,017	48,193
Number of IT professionals entering workforce	90,867	71,961	79,593	83,233	90,152
Number of non-IT engineers entering IT workforce	35,612	39,746	46,324	54,250	63,149
Number of graduates (other disciplines) entering IT workforce	31,620	34,926	39,205	42,446	47,061
Total Fresh IT Labor Supply	158,099	146,633	165,121	179,929.00	200,362

Source: NASSCOM



Russian IT Workforce Development: Collaboration with Universities

Russian IT companies collaborate with Russian universities and independent training centers.

Small companies (<100 employees) commonly use the following forms of collaboration:

- Short-term trainings for employees
- Employees working as tutors and lecturers
- Joint scientific researches in the IT sphere

Mid-size (100-1000 employees) and large companies (>1000 employees) use enhanced schemes:

- Custom educational programs for IT students
- Industry practice opportunities for IT students
- Joint labs and research projects

Source: Auriga Survey 2005

Russian IT Workforce Development: Training Centers

While small companies (<100) generally do not have their own training centers and prefer to use external organizations to train their employees, mid-size (100-1000) and large (>1000) companies often establish **in-house training centers** to:

- Train their own staff
- Improve new employees' skills
- Provide paid trainings for external clients

Typical curriculum covers

- Technologies
- Management skills
- English language skills

Source: Auriga Survey 2005



Russian IT Workforce Development: English Proficiency

One of the major concerns of English-speaking prospects is English proficiency of a vendor's staff. Therefore, Russian IT companies are increasing their emphasis on English training.

The RUSSOFT companies polled in December 2005 generally **encourage their employees to improve their English skills**, both spoken and written.

Two basic approaches are used:

- In-house English courses for employees
- Externally based English courses

The Survey shows that most companies bear costs of English training for their employees.

Source: Auriga Survey 2005