Exploring ICT investment opportunities in Greece

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The Greek ICT market today
The Greek ICT sector has been displaying strong growth in recent years

- Strong uptake of new technologies
  - Booming broadband penetration
  - Worldwide leaders in mobile penetration
- Strategic geographical position and established company network in the region

World leaders in mobile penetration (% of pop.)

Source: Pyramid Research, OECD, Economist Intelligence Unit, 2009

Broadband penetration (mn lines)

Source: Greek Telecoms Regulatory Authority, 2010

57% CAGR in the last 3 years
The Greek ICT: More T than IC

Breakdown of ICT businesses

- Informatics: 15%
- Telecom: 85%

Source: Information society observatory; 2008

Top telecom companies (sales, in mn euros)

- OTE: 2,412
- Cosmote: 1,908
- Vodafone: 1,305
- Wind: 1,073
- Forthnet: 169
- Hellas on Line: 98
- On Telecoms: 51

Source: ICAP, company results, 2009

Top 10 local IT companies (sales, in mn euros)

- Intracom: 547
- Info Quest: 402
- Singular Logic: 103
- Unisystems: 97
- Altec: 85
- Intersys: 61
- Space Hellas: 50
- Dionic: 43

Source: ICAP, company results, 2009
The Greek ICT sector comprises mainly of service providing SMEs

**Greek ICT companies’ size (persons)**

- 50-250: 12%
- over 250: 2%
- up to 10: 41%
- 11-50: 45%

**Breakdown per activity**

- ICT services: 43%
- Sale of equipment: 31%
- Telecoms, media: 11%
- Equipment manufacture: 8%
- Software developers: 7%

Note: Excluding the incumbent OTE
Source: Information Society Observatory; 2008
Greece’s innovation hubs are picking up momentum

Currently, Greece might be a moderate innovator...

Innovation leaders

Moderate innovators

Catching-up countries

Source: Data from European Commission; 2008

...but it is picking up momentum fast

2009 Innovation performance indicator growth

Source: Data from European Commission, 2009
A wide range of top notch international research takes place in the main ICT clusters

Aristotle University of Thessaloniki
- Department of Physics
- Department of Chemistry
- Department of Informatics

Thessaloniki Science Park

National Observatory of Athens
- Nestor Institute for Astroparticle Physics

Demokritos National Center of Research
- Institute of MicroElectronics
- Institute of Informatics Telecommunications
- Institute of Nuclear Technology – Radiation Protection
- Institute of Nuclear Physics

Capodistrian University of Athens
- Department of Informatics and Telecommunications

Metsovio Polytechnic University
- School of Applied Mathematical and Physical Sciences
- School of Civil Engineering
- School of Mechanical Engineering
- School of Electrical and Computer Engineering
- School of Chemical Engineering
- School of Mining Engineering and Metallurgy
- School of Naval Architecture and Marine Engineering

Corallia microelectronics cluster
- Nano/Microelectronics & Embedded Systems cluster

Lavrion Tech Park

Games development cluster
The Greek investment proposal
Greece offers a favorable environment for ICT investment

- Strong market fundamentals
- Availability of a superb talent pool
- Leading R&D activity
- Welcoming ICT ecosystem
- Rewarding Public & Private Sector Projects
Greece offers the opportunity to recruit top ICT talent at a fraction of the cost

Gross annual income of engineers at key ICT clusters (USD thous.)

Source: UBS; Prices and Earnings report 2009

Top ten countries in ICT Development Index skills

Source: ITU, 2009

ICT human capital: Top 20 countries

Source: Economist Intelligence Unit; Benchmarking IT industry, 2009
... the market is a value-adding option for tapping into high-caliber engineers

- Engineers end up mainly as site engineers and tend not to leave their trade
- Therefore, recruiting from the market is a value-adding option for recruiting high-caliber engineers

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**Distribution of ICT workforce per ICT activity**

- Telecommunications services: 29,675
- Informatics services: 6,891
- Equipment manufacturing: 23,016
- Equipment wholesale: 1,985

**Distribution of ICT workforce per corporate role**

- Technicians / Site engineers: 21%
- Back office: 17%
- Maintenance engineers: 10%
- Freelancers / Contractors: 10%
- Account officers: 8%
- CEOs and Directors: 8%
- Architects and civil engineers: 7%
- Brokers: 5%
- Accounting and reporting: 3%
- Salespeople: 2%
- Other: 9%

*Source: Information society observatory, 2008*
... and Athens being the biggest talent pool in Greece

Average domestic engineering graduates per year

<table>
<thead>
<tr>
<th>Engineering Area</th>
<th>Annual Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electr. &amp; Electronic Eng</td>
<td>1,558</td>
</tr>
<tr>
<td>Mech. Eng</td>
<td>799</td>
</tr>
<tr>
<td>ICT Eng</td>
<td>730</td>
</tr>
<tr>
<td>Industrial Eng</td>
<td>677</td>
</tr>
<tr>
<td>Informatics</td>
<td>484</td>
</tr>
<tr>
<td>Chemical Eng</td>
<td>226</td>
</tr>
<tr>
<td>Applied Math</td>
<td>193</td>
</tr>
<tr>
<td>Mech. Eng &amp; Aeronautics</td>
<td>178</td>
</tr>
<tr>
<td>Mining &amp; Mineral</td>
<td>142</td>
</tr>
<tr>
<td>Energy Tech.</td>
<td>131</td>
</tr>
<tr>
<td>Environ. Eng</td>
<td>125</td>
</tr>
<tr>
<td>Materials Science</td>
<td>55</td>
</tr>
<tr>
<td>Marine Eng</td>
<td>48</td>
</tr>
</tbody>
</table>


Distribution of engineering graduates

- Athens: 29%
- Thessaloniki: 38%
- Herakleion: 9%
- Patras: 10%
- Rest of Greece: 13%

Note: Data includes postgraduate and doctorate students.

Distribution of ICT workforce

- Athens: 63%
- Thessaloniki: 14%
- Herakleion: 3%
- Patras: 3%
- Rest of Greece: 17%

Note: Data includes postgraduate and doctorate students.

Source: Information Society Observatory, 2008

Existing pool of approx. 70k people in Greek ICT today

Approximately 5,300 engineering graduates per year

Greek students abroad not included
Several location options for ICT activity in Greece

### Key ICT clusters in Greece
- Athens
- Thessaloniki
- Patras
- Iraklio
- Ioannina

### Accessibility
- There are international airports in Athens, Thessaloniki, and Iraklio.
- Patras is located 2.5 hours by car from Athens and 3.5 hours by train.

### Population

<table>
<thead>
<tr>
<th>Location</th>
<th>Population (thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athens</td>
<td>2,665</td>
</tr>
<tr>
<td>Thessaloniki</td>
<td>1,057</td>
</tr>
<tr>
<td>Patras (Achaia)</td>
<td>163</td>
</tr>
<tr>
<td>Iraklio</td>
<td>138</td>
</tr>
<tr>
<td>Ioannina</td>
<td>70</td>
</tr>
</tbody>
</table>

### Well educated labor force
- Athens
- Thessaloniki
- Patras
- Iraklio
- Ioannina

### University/Private sector cooperation potential
- Athens
- Thessaloniki
- Patras
- Iraklio
- Ioannina

### Language expertise
- Athens
- Thessaloniki
- Patras
- Iraklio
- Ioannina

### Business parks/Incubators
- Athens
- Thessaloniki
- Patras
- Iraklio
- Ioannina

### Industrial areas
- Athens
- Thessaloniki
- Patras
- Iraklio
- Ioannina

### Investment incentives
- Athens: 25%
- Thessaloniki: 40%
- Patras: 40%
- Iraklio: 40%
- Ioannina: 50%

*Maximum subsidy allowed for small enterprises under the New Investment Law. The Law is currently in draft form and may change prior to ratification.
Corallia Cluster: a dynamic microelectronic eco system

- Reached critical mass in 2006
- Comprising of more than 100 Industrial and Academic members, including 3 design centers of MNEs (Bytemobile, Sitel Semiconductor & Nanoradio)
- Focuses in the Nano/Microelectronics & Embedded Systems sector
- Facilitated by Corallia Clusters Initiative
- the first of its kind in Greece

2006 – 2008 growth rate

<table>
<thead>
<tr>
<th>Category</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover</td>
<td>59.6%</td>
</tr>
<tr>
<td>Employment</td>
<td>92.6%</td>
</tr>
<tr>
<td>Exports</td>
<td>109.7%</td>
</tr>
<tr>
<td>Patents</td>
<td>137.5%</td>
</tr>
</tbody>
</table>
Greece’s investment opportunities lie at value adding services

Depending on the advantages to be exploited, different projects can be realised

**Advantage 1:**
- Excellent talent pool
- Competitive wages

**Advantage 2:**
- Geographic location

**Advantage 3:**
- Strong market

- Software development
- Microchip and MEMS design
- R&D lab
- SEE(MENA) or EU service center
- SEE(MENA) or EU training center
- Regional support center
- Regional headquarters

Depending on the advantages to be exploited, different projects can be realised.
The project can be deployed modularly, depending on your risk profile

- Single small R&D lab in a business incubator
- Increase team of engineers
- Upgrade equipment
- Move to own offices
- Add commercial/production operations
- Establish regional headquarters

The project can be deployed modularly, depending on your risk profile
Several attractive public and private projects throughout Greece

Public Projects
- Homeland security
- Public transport
- Broadband Networks
- E-government

Private Projects
- Software development
- R&D facilities
- Regional support center
- Joint Ventures
Indicative cost factors:
How cheap is it to set up a business in Greece?

Indicative key operating costs in Greece

### Basic remuneration rates

<table>
<thead>
<tr>
<th>Gross Salaries</th>
<th>No experience</th>
<th>10 years experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountant</td>
<td>940</td>
<td>1,150</td>
</tr>
<tr>
<td>Salesperson</td>
<td>860</td>
<td>1,000</td>
</tr>
<tr>
<td>Office employee</td>
<td>790</td>
<td>990</td>
</tr>
</tbody>
</table>

Source: Ministry of employment; 2009

### Cost of land plot in key industrial areas (€/sq.m.)

- Iraklio: 250.0
- Thessaloniki: 130.0
- Patra: 54.0
- Alexandroupoli: 50.0
- Larnia: 45.0
- Larisa: 40.5
- Ioannina: 31.5
- Florina: 27.0

Source: Bank of Piraeus; 2009 (proprietor)

### Cost to erect industrial building

<table>
<thead>
<tr>
<th>Material</th>
<th>€/sq.m.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal construction</td>
<td>550</td>
</tr>
<tr>
<td>Cement and bricks</td>
<td>800</td>
</tr>
</tbody>
</table>

Source: ADK consultants; 2009

### Apartment rents in Athens (€/month)

- Furnished 4-room apartment:
  - Expensive: 2,380
  - Medium: 1,800
  - Cheap: 1,320

- Furnished 3-room apartment:
  - Expensive: 1,360
  - Medium: 840
  - Cheap: 610
  - Normal local rent: 800

Source: UBS; Prices and Earnings 2009
Mobile networks are becoming more and more dependent on high-capacity wireless backhaul. We believe that the next generation microwave radios will be based on highly integrated RFICs. Adding a group of proficient RFIC engineers will allow us to reach higher levels of integration while continuing to stretch the envelope in terms of radio capacity, reliability and availability. In the process, it will create a significant product differentiation for Ceragon.”

Ira Palti, President and CEO of Ceragon

Source: Ceragon Networks

- Ceragon Networks Ltd. (NASDAQ: CRNT), the provider of high-capacity, 4G/LTE-Ready wireless backhaul networks, acquired Elxys Innovations, of Athens, Greece. Elxys is a designer of advanced, next-generation radio-frequency integrated circuits (RFIC). This acquisition solidifies Ceragon’s leadership in RF design and allows it to further optimize its core radio technology. By strengthening the radio design team with a group of seasoned professionals in the RFIC domain, Ceragon will continue to offer its customers superior radio performance, higher capacities, reduced power consumption and better overall cost.

- Elxys' acquisition adds to the success record of the Greek Semiconductor industry competing in the global market. It also demonstrates the innovation and talent available in the Greek high tech sector.
HTC, the leading Taiwanese smartphone manufacturer, has set up regional headquarters in Greece, adding another 16 countries to the existing portfolio of 17 creating a region comprising of 33 countries.

‘Greece is a business hub for the whole of the SEEMENA region, as it is its center, even geographically. Besides the international operations of this newly established HTC branch, we think that the Greek smartphone market has significant growth potential and we are planning to invest in it in the near future’

Source: HTC’s regional director for South Eastern Europe, Middle East and North Africa
ICT success story: NSN’s R&D center in Athens

- Nokia, the leading ICT provider, has established a R&D center in Athens
  - One out of four in Europe
  - Operates with 400 highly skilled telecom and software engineers
- Provides research & software development for 3 leading technology product lines
  - Developing local know-how
  - Providing local added value
ICT success story: Deutsche Telekom acquires controlling stake in OTE

Transaction description

- In May 2008, DT acquired approx. 20% in OTE from Marfin Investment Group
- Via market purchases and the purchase of shares from the Hellenic Republic, DT acquired 30%
- Total consideration for this stake: over €3.5 bn
- Together with the Hellenic Republic, which holds 20%, the two parties will jointly hold a majority in OTE
  - Furthermore, the Hellenic Republic has the option till end-2011 of selling to DT shares representing up to 10% of OTE
- The two parties agreed on corporate government stipulations which assign management responsibility to Deutsche Telekom

Transaction rationale for Deutsche Telekom

Greece offers growth and stability in a quality market

- Since 2002, Greece recorded annual growth rates of up to 5%, and has constantly performed above the Eurozone average
- Greece remains an attractive, stable and secure investment destination, thanks to rigorous reforms and generous incentives

- **Workforce quality factors** make the country competitive and more attractive than many of its European counterparts
  - Greece boasts one of the higher percentages of university degree holders among its workforce globally
  - Greece combines a good pool of skilled workers and boasts one of the lowest labor costs in the Eurozone
  - Labor productivity has increased significantly in recent years; Greece has the highest number of hours worked in Europe

Source: Extract from Deutsche Telekom presentation
ICT success story:
Microsoft establishes an Innovation Center in Greece

- In an effort to foster local innovation and support the growth of the Greek software economy, Microsoft Hellas inaugurated the Microsoft Innovation Center (MIC) in Athens.

- With the vision to become an “innovation accelerator” for Greece, the MIC will:
  - Focus on supporting students and start-ups.
  - Offer support in the form of software tools for the creation of innovative applications and solutions as well as training on technical and business topics.
  - Act as a gateway between innovators and Microsoft’s vast network offering access to internal resources, Microsoft’s partner ecosystem, local and global organizations, industry experts as well as investors and VCs.
  - Use Microsoft’s established worldwide marketing and PR engine to promote local innovation both within the country as well as globally ensuring Greece’s visibility on the worldwide innovation map.
Your Investment Partner in the region

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