



CONTEXT FACTORS

Shared Services Center Conference

Fundão, Portugal

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PT Cloud & Data Centers

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AGENDA













CRTERIA FOR SELECTING A SERVICE CENTER LOCATION

THE TECHNOLOGICAL FACTOR AND THE OPPORTUNITY
EXISTING IN PORTUGAL



SELECTING A SERVICE CENTER LOCATION (I)













| | | |
|---|---|--|
|  | Cultural Compatibility <ul style="list-style-type: none">• Affinities and adaptability• Easy of doing business with buying locations |  31 st in 139 countries rank in the Easy of Doing Business ⁽¹⁾ |
|  | Language <ul style="list-style-type: none">• English as the most relevant• Other as German in East Europe or Japanese in Asia |  Total score mean of 95 out of 120 (TOEFL 2013) 7,56 out of 10 in language skills rating ⁽²⁾ |
|  | Educational System <ul style="list-style-type: none">• Quantity of Universities• Number of graduates in IT-related courses |  6,5% of expenditure of GDP on education ⁽³⁾ |
|  | Labor Pool <ul style="list-style-type: none">• Quantity and quality of current labor pool• Level of expertise in areas like sftw. dev. or proj mng. |  5,84 out of 10 in availability of skilled labor ⁽⁴⁾ 43% rate at tertiary level ⁽⁵⁾ |
|  | Global & Legal Maturity <ul style="list-style-type: none">• Legal system legitimated by reasonable intl. standards• Legal support for foreign entities doing business |  4,71 out of 10 ⁽³⁾ in labor regulations ranking . |

Sources: 30 Leading Locations for Offshore Services 2014 (Gartner); Portugal as Nearshore Outsourcing Destinations (Portugal Outsourcing); (1) The world Bank – Doing Business 2014, 189 countries; (2) IMD World Competitiveness; (3) IMD World Competitiveness; (4) IMD World Competitiveness; (5) OECD 2012.

SELECTING A SERVICE CENTER LOCATION (II)



| | | |
|---|--|--|
|  | Political & Economic Environment <ul style="list-style-type: none">• Stability of the system of government• Geopolitical risks and security |  77,62 points out of 100 in governance matters ⁽¹⁾ |
|  | Government Support <ul style="list-style-type: none">• Promotion offshore/nearshore locations• How country's attributes are communicated |  1,49% of expenditure of GDP on R&D and innovation investment ⁽²⁾ |
|  | Cost <ul style="list-style-type: none">• Costs of labor• Costs of real estate, infrastructure and telco |  0,4% decrease Q4 2013/ Q4 2012 in labor cost ⁽³⁾ |
|  | Data and Intellectual Property Security and Privacy <ul style="list-style-type: none">• Effectiveness of legislation in protecting intellectual property, data protection and privacy, copyright, trademark and patent laws |  4,5 out of 7 points in intellectual property protection ⁽⁴⁾ |
|  | Infrastructure <ul style="list-style-type: none">• Quality of infrastructure such as power, telecommunications, transportations facilities |  6,1 out of 10 in quality of overall infrastructure ⁽⁵⁾ |

Sources: 30 Leading Locations for Offshore Services 2014 (Gartner); Portugal as Nearshore Outsourcing Destinations (Portugal Outsourcing); (1) The world Bank – The Worldwide Governance Indicators, 2013 update; (2) IMD World Competitiveness; (3) Eurostat; (4) World Economic forum, The global Competitiveness Report 2013-2014; (5) World Economic forum, The global Competitiveness Report 2013-2014.

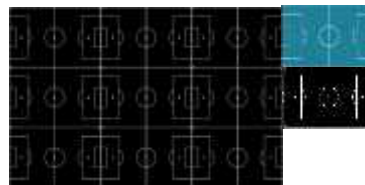
PT DATA CENTRE AS AN EXAMPLE OF COMPUTING RESOURCES SERVICE CENTER



A **data center** is a centralized repository, either physical or virtual, for the storage, management, and dissemination of data and information organized around a particular body of knowledge or pertaining to a particular business.



Increasing by **+60%** the existing DC capacity in Portugal



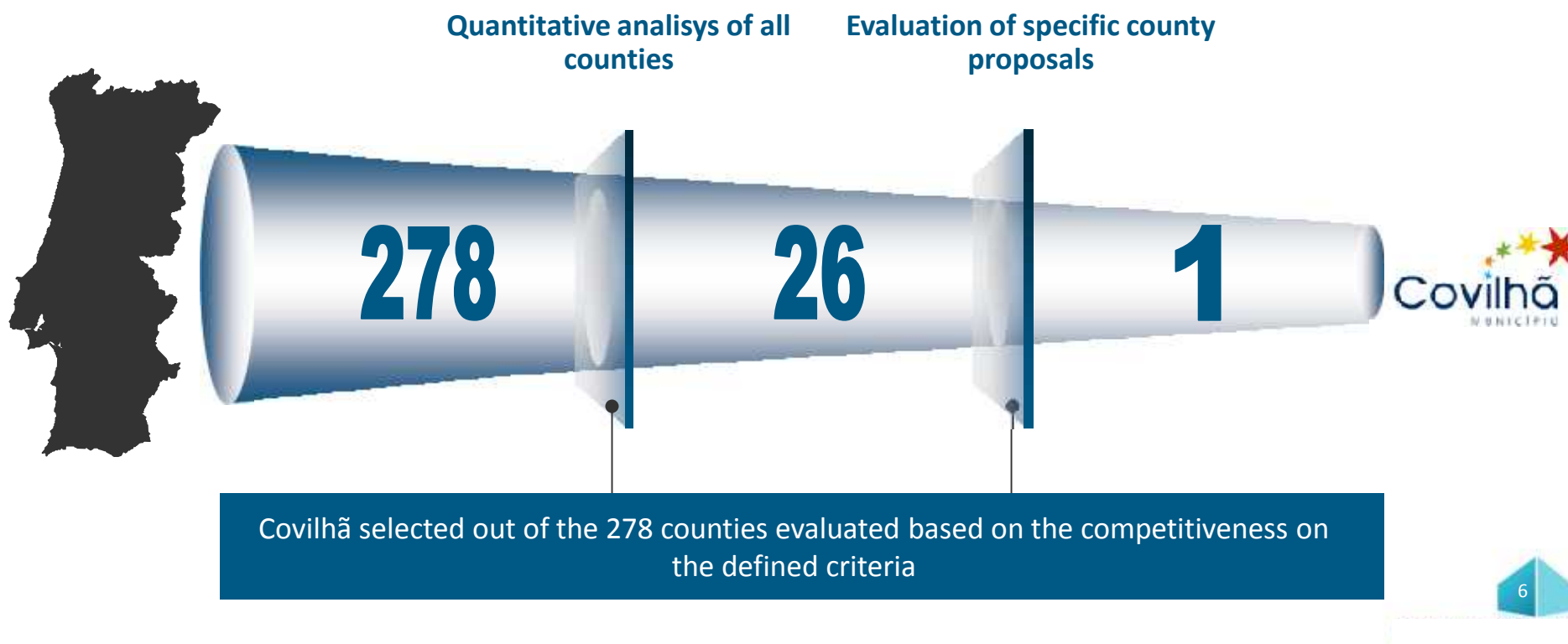
The size of **11 football fields** (75,500m²)



Creating **1,400 new jobs**



ASSESSMENT CRITERIA FOR ENSURING PT DATA CENTER WITH GLOBAL SCALE COMPETITIVENESS



ASSESSMENT CRITERIA FOR ENSURING PT DATA CENTER WITH GLOBAL SCALE COMPETITIVENESS

Business Specific



Risk of Natural Phenomena

- Risk of flooding and landslides
- Seismic risk
- Absence of pollution and fire hazards



Environmental Impact

- Access to water resources for cooling
- Mild temperature potentiating Free Cooling







Power

- Installed power capacity (40MW)
- Power supply for high voltage (60kV)
- Favorable conditions for the development of renewable energy

ASSESSMENT CRITERIA FOR ENSURING PT DATA CENTER WITH GLOBAL SCALE COMPETITIVENESS

Generic

| | | |
|---|--------------------------------------|---|
|  | Telecommunications | <ul style="list-style-type: none">• Connection the fiber network backbone assuring connectivity with high capacity and bandwidth• Reliability and stability of the network |
|  | Transportations and other facilities | <ul style="list-style-type: none">• Easy connection the network of road and railway transportation system• Sewerage system and other support services |
|  | Proximity to University | <ul style="list-style-type: none">• Partnerships to develop skilled HR to work in the Data Center• Partnerships to develop new services in the IT, IS and Cloud |
|  | Investment Sustainability | <ul style="list-style-type: none">• Administrative and fiscal costs• Development support through specific funds |

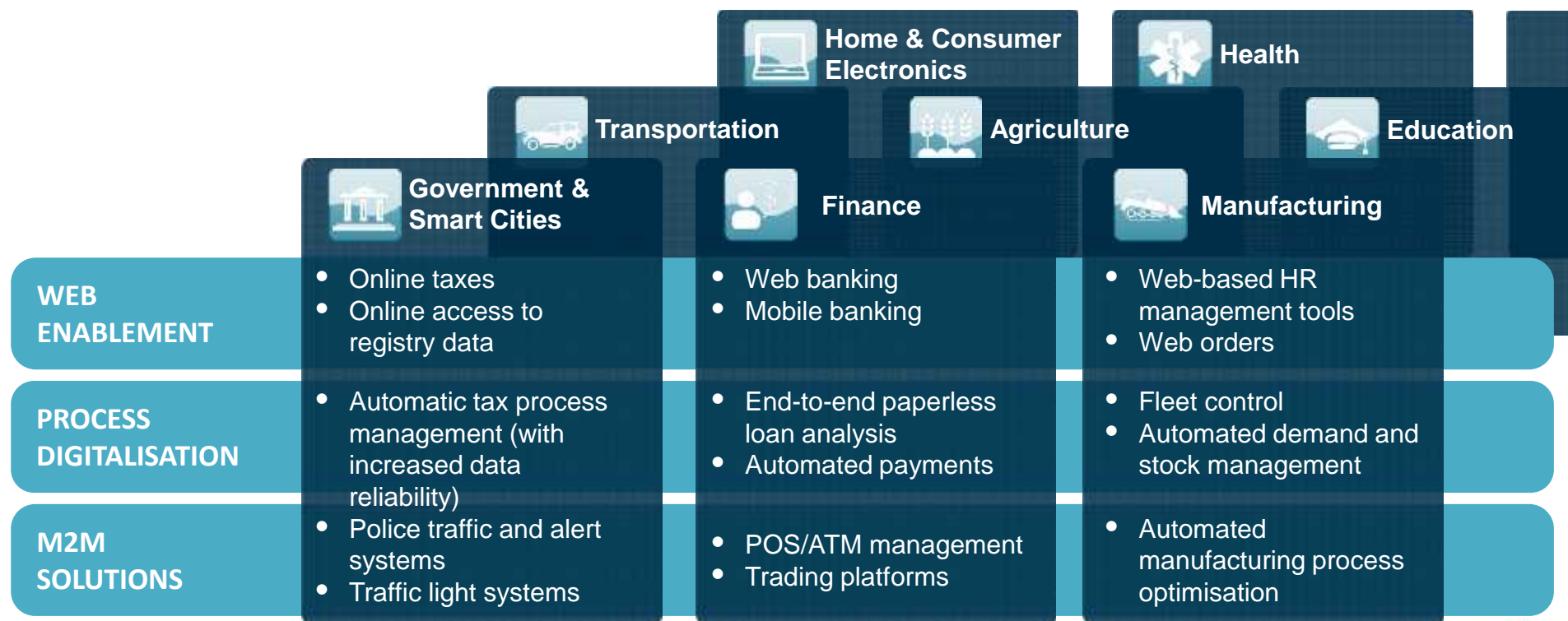
AGENDA



CRTERIA FOR SELECTING A SERVICE CENTER LOCATION

**THE TECHNOLOGICAL FACTOR AND THE OPPORTUNITY
EXISTING IN PORTUGAL**

TECHNOLOGY IS THE DRIVER OF EFFICIENCY GAINS



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THEN...

Store



Ticket



Check-in



Boarding pass



Passport control



NOW...

Website



E-ticket



Online check-in



Mobile boarding pass



Auto passport control



TECHNOLOGY AT THE CORE OF BUSINESSES

Technology improves customer service, but also...

...makes businesses **agile**

...encourages **innovation**

...levels the **marketplace**

...allows for **cross-border collaboration**



Digital technology supports
~58% of
business processes worldwide

PORTUGAL HAS STATE OF THE ART TECHNOLOGICAL INFRASTRUCTURE



Access



FTTH coverage

1,6 Million



4G coverage

+ 90%



**WiFi network
National Coverage**

1.600 public hotspots

Transportation



**National backbone with
speeds of up to 100 Gbps**



**Management of 70%
of submarine systems
landings in Portugal**



588 point-to-point
connections

Storage



**Top Tier Data Center
network operating at a
global scale**

IT rooms area: 26.000 m²

Servers: 56.000

Storage capacity: 41 petabytes (41 x 10¹⁵ bytes)

SEVERAL POINTS OF PRESENCE THROUGH WESTERN EUROPE AND UNITED STATES



| LISBON TO... | Services | Latency | PT Dedicated circuits |
|---------------------------------|--|----------------------|--|
| MADRID | <ul style="list-style-type: none"> • SDH, IP, ETHoMPLS • SDH, IP | 5ms | <ul style="list-style-type: none"> • Up to 2500 Mbps |
| LONDON | <ul style="list-style-type: none"> • SDH, IP, ETHoMPLS | 15ms | <ul style="list-style-type: none"> • Up to 10000 Mbps |
| PARIS | <ul style="list-style-type: none"> • SDH, IP | 32ms | <ul style="list-style-type: none"> • Up to 620 Mbps |
| FRANKFURT | <ul style="list-style-type: none"> • IP | 26ms | <ul style="list-style-type: none"> • Up to 2500 Mbps |
| AMSTERDAM | <ul style="list-style-type: none"> • SDH, IP | 16ms | <ul style="list-style-type: none"> • Available only through third-parties |
| MIAMI WASHINGTON NEW YORK | <ul style="list-style-type: none"> • SDH • IP • IP | 37ms 52ms 46ms | <ul style="list-style-type: none"> • Miami: Up to 155 Mbps |

*Shown rates correspond to PT's current network.

Note: Other rates may be provided by third-parties under future contracts.

AND NETWORK CAPABILITIES REACHING OUT TO THE WORLD



SOLUTIONS HOSTED BY PORTUGAL TELECOM



Portugal Telecom Hosts 25+ Cloud Solutions for Customers Around the World



IN CONCLUSION



There are several context factors for selecting a Nearshore Service Center, each of which assuming more or less relevance depending on the target market and business processes that companies are willing to deploy nearshore.

Portugal has state of the art IT, IS, Cloud and communications infrastructure, always an important criteria addressed by companies searching for a Nearshore Shared Service Center Location.

The existing examples of Nearshore Shared Service Centers already established in Portugal, providing world wide services, are good and proven examples of our countries potential as a Service Center location

An abstract illustration featuring a central blue 3D cube on a white base. The background includes stylized light blue clouds, a perspective grid of blue and white rectangles on the ground, and light blue geometric shapes on the sides. A thick blue horizontal bar is at the bottom.

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