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Associazione nazionale per lo sviluppo delle biotecnologie

The Biotech sector: scientific innovation & job creativity

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Multiplier Event
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Agenda

- ❖ Scientific innovation
- ❖ The Italian biotech sector
- ❖ Critical issues
- ❖ Job market



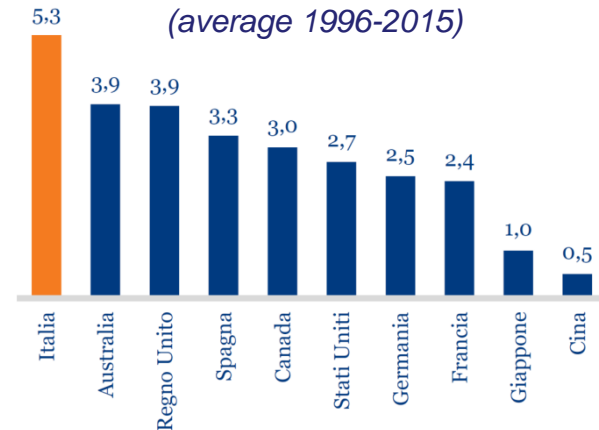


Leader of scientific innovation

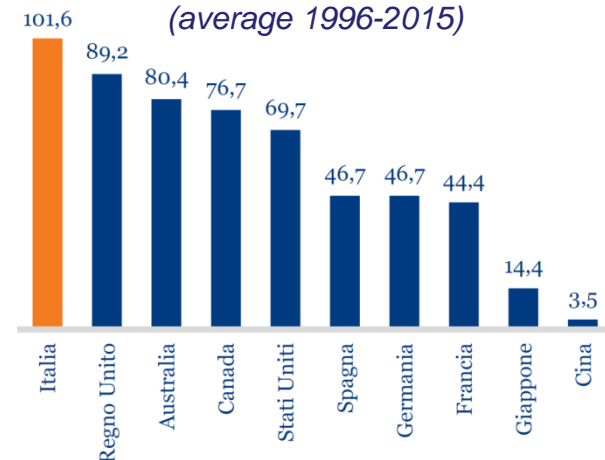
Italy: a top position

- ❖ Excellent scientific production:
 - ❖ 1st by number of publications per researcher
 - ❖ 1st by number of citations per researcher
 - ❖ 1st in the number of scientific publications on Rare Diseases
- ❖ Good entrepreneurial skills:
 - ❖ 4th in Europe by number of companies in Life Sciences area
 - ❖ 2nd in Europe for the implementation of incentive measures for entrepreneurship

Number of articles per researcher
(average 1996-2015)



Number of citations per researcher
(average 1996-2015)








Fruits of Italian genius and innovation

Excellent position on ATMPs market

❖ **1st Country by number of authorized ATMPs in the EU**

❖ **The 1st stem cell ATMPs approved in the Western world is Italian**

❖ **The 1st gene therapy ATMPs approved as a result of the public-private partnership is Italian**

| | MA | Product | Company | | Therapeutic area |
|---|------|------------|--------------------|---|--|
| 1 | 2016 | Strimvelis | GSK- (Telethon) |  | Severe Combined Immunodeficiency |
| 2 | 2016 | Zalmoxis | MolMed |  | GVH Disease Hematopoietic Stem Cell Transplantation |
| 3 | 2015 | Holoclar | Chiesi |  | Corneal Diseases Stem cell transplantation |
| 4 | 2015 | Imlygic | Amgen |  | Unresectable metastatic melanoma |
| 5 | 2012 | Glybera | UniQure |  | Hyperlipoproteine mia |



The key figures

| | Numero imprese | Fatturato biotech | Investimenti in R&S <i>intra-muros</i> | Investimenti in R&S <i>intra-muros</i> biotech | Addetti biotech | Addetti R&S biotech | |
|------|--------------------------|-------------------|--|--|-----------------|---------------------|-------|
| 2015 | Totale imprese | 553 | 10.503.413 | 1.584.840 | 444.899 | 9.742 | 3.480 |
| | R&S biotech dedicate | 279 | 4.356.394 | 369.761 | 361.244 | 3.777 | 2.258 |
| | ... a controllo italiano | 259 | 666.671 | 171.552 | 164.037 | 2.546 | 1.346 |

Valori monetari in migliaia di euro

VS
>25.000
biotech
graduates
!

A high research-intensive industry

- ❖ Biotech enjoys the highest levels of educational attainment:
 - ❖ **70%** graduate employees
 - ❖ **82%** graduates employees among dedicated biotech R&D firms



Italy at the very bottom

❖ Entrepreneurial level:

- ❖ Very small-sized companies
- ❖ Companies undercapitalized for the lack of Venture Capitalists

❖ The worst IP performance:

- ❖ Little patents
- ❖ Little value/revenues



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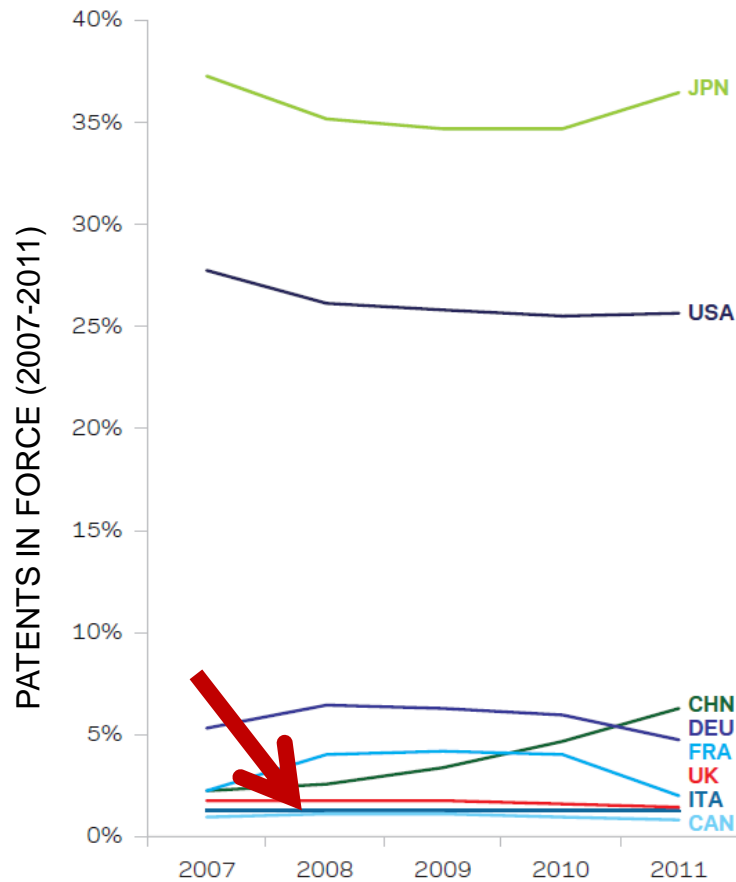
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Critical issues

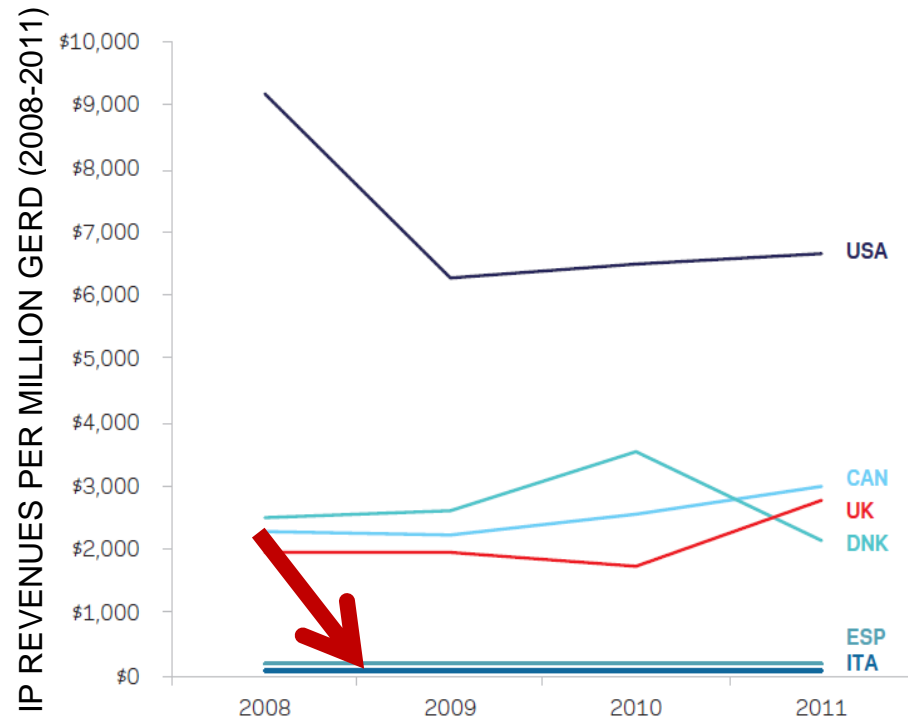
Value? No thanks!

Little patents...



Source: WIPO Statistics Database (March 2013)

...and it becomes value even less!



*Gross Domestic Expenditure on R&D

Source: ProTon Europe Annual Survey Reports e Association of University Technology Managers STATT Database

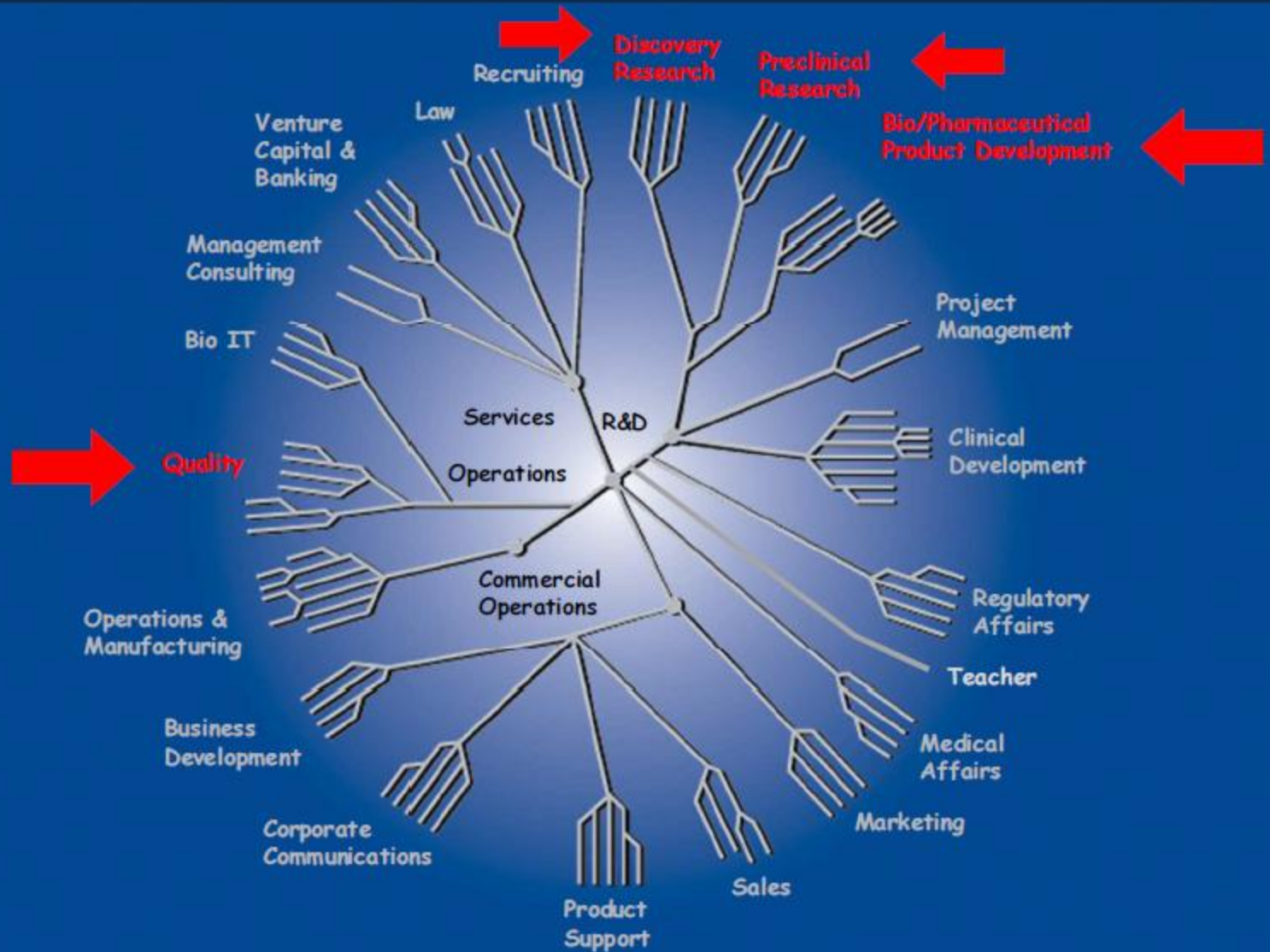


Occupational creativity required

Despite biotech requiring researchers, nowadays the industry is looking for professionals who differentiate from the typical researchers in the following areas:

- ❖ Management
- ❖ Regulatory
- ❖ Clinical Research
- ❖ Scientific Communication
- ❖ Marketing
- ❖ IP & Technology Transfer
- ❖ Quality Control

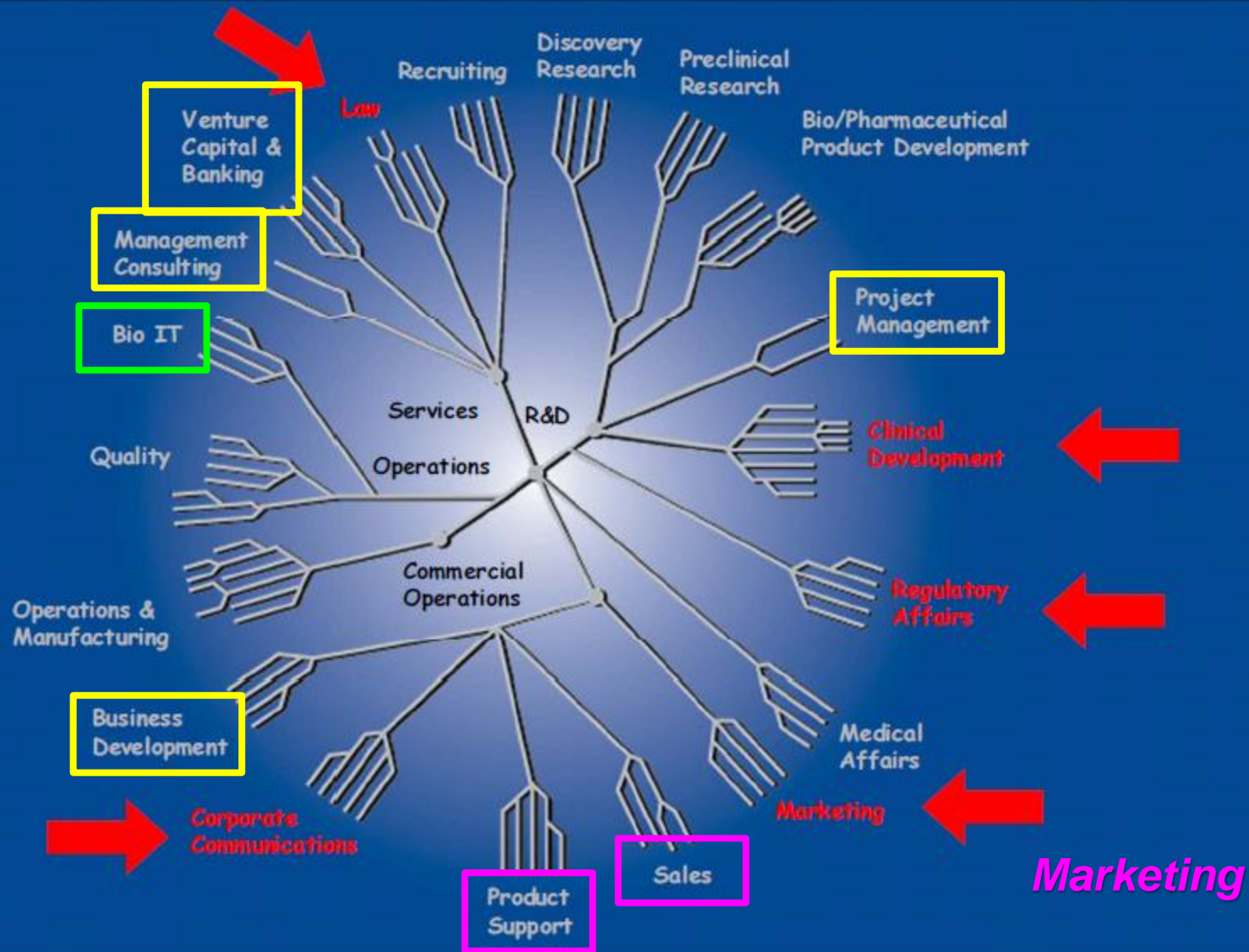
Bench Research Positions



If you enjoy writing...

Business

IT





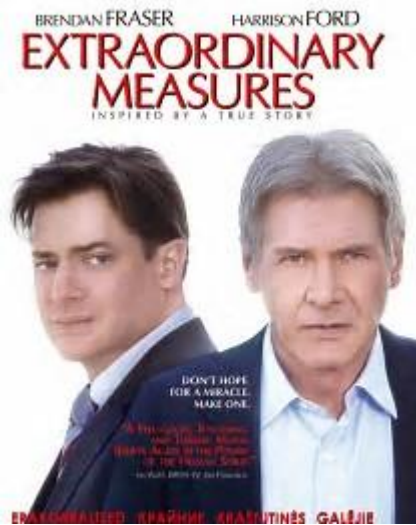
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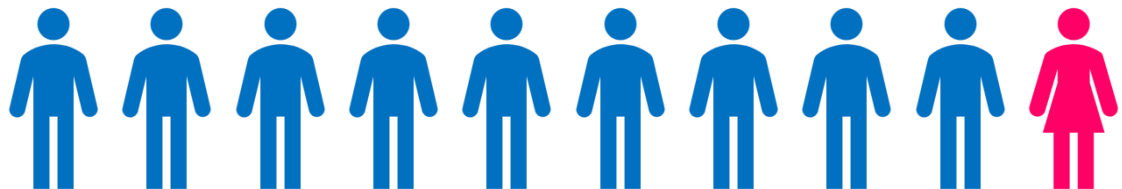
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Job market

Occupational creativity required



Keep in mind you can be your own Entrepreneur



Biotech gender gap

Women hold only around 10% of the board positions in biotech firms

Source: Liftstream, *A Public Reality for Women in Biotech Boardrooms* (2016)



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www.assobiotec.it

