FUTURE OF ARTIFICIAL INTELLIGENCE

Andrew Trabulsi
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What are the major investment trends?

What’s the IP landscape look like?

What’s coming next?
Where’s the money going?
Funding—where are we?

Private investment growing rapidly, M&A peaked in 2012

Past five years of funding into artificial intelligence ($mn)

Source: Capital IQ, Quid, iftf
How’s the market shaping up?

Key investment areas since 2010

Market Composition

- Medical: 10%
- MapReduce: 9%
- NLP: 9%
- Ads: 8%
- ERP: 8%
- Robotics: 7%
- Shopping: 7%
- Computer Vision: 6%

Source: Capital IQ, Quid, iftf
Where’s it going?

Notable private investments and M&A deals since 2010

<table>
<thead>
<tr>
<th>Company</th>
<th>Private</th>
<th>M&amp;A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quid, Inc.</td>
<td>$49mn</td>
<td>—</td>
</tr>
<tr>
<td>ColdLight Solutions, LLC</td>
<td>—</td>
<td>$105mn</td>
</tr>
<tr>
<td>Databricks, Inc.</td>
<td>$54mn</td>
<td>—</td>
</tr>
<tr>
<td>Bright Media Corp.</td>
<td>—</td>
<td>$120mn</td>
</tr>
<tr>
<td>Antuit Pte. Ltd.</td>
<td>$59mn</td>
<td>—</td>
</tr>
<tr>
<td>Equivio, Ltd.</td>
<td>—</td>
<td>$200mn</td>
</tr>
<tr>
<td>Sentient Technologies, LLC</td>
<td>$104mn</td>
<td>—</td>
</tr>
<tr>
<td>Deep Mind Technologies, Ltd.</td>
<td>—</td>
<td>$400mn</td>
</tr>
</tbody>
</table>

Source: Capital IQ, Quid, iftf
But what are they doing with all this money?
Patent development is taking off

Over 7x growth in IP development from 2004 - 2013

Previous ten years of patent filings

Source: Thomson Reuters, Quid, iftt
The IP ecosystem is diverse

Machine Learning patents across use cases

IP Deconstruction

- Text Classification: 11%
- Customer Analytics: 11%
- Querying Methods: 8%
- Medical Diagnostics: 7%
- Data Mining: 7%
- Cybersecurity: 6%
- MRI Analysis: 6%
- Facial Recognition: 4%

Source: Thomson Reuters, Quid, iftt
But held by only a few players

<table>
<thead>
<tr>
<th>Company</th>
<th>Patents held</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft</td>
<td>140</td>
<td>9%</td>
</tr>
<tr>
<td>IBM</td>
<td>90</td>
<td>6%</td>
</tr>
<tr>
<td>Yahoo</td>
<td>59</td>
<td>4%</td>
</tr>
<tr>
<td>Google</td>
<td>49</td>
<td>3%</td>
</tr>
<tr>
<td>Nippon Telegraph &amp; Telephone Corp</td>
<td>34</td>
<td>2%</td>
</tr>
<tr>
<td>Hewlett-Packard</td>
<td>28</td>
<td>2%</td>
</tr>
<tr>
<td>Behavioral Recognition Systems, Inc.</td>
<td>24</td>
<td>1.5%</td>
</tr>
<tr>
<td>Qualcomm</td>
<td>20</td>
<td>1%</td>
</tr>
</tbody>
</table>

Intellectual property not predominantly held by start-ups

Source: Thomson Reuters, Quid, iftf
What’s next?
Combinatorial Innovation

Won’t be just single technology or use case that changes game

- Networked Matter
- Data
- Resources
- Substances
- Industry
- New Competition
- Life Science

- Logistics
- Artificial Intelligence
- Distributed Computation
- Culture & Society
- Information Networks
- Personal Experience
Combinatorial Innovation

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Revisiting our patent analysis

Over 7x growth in IP development from 2004 - 2013

Previous ten years of patent filings

Source: Thomson Reuters, Quid, iftf
It’s really a much bigger story…

IP development across use cases 2004 - 2013

Previous ten years of patent filings

Source: Thomson Reuters, Quid, iftf
Innovations build on top of each other

IP development across use cases 2004 - 2013

Previous ten years of patent filings

Source: Thomson Reuters, Quid, iftf
To create a wide range of opportunities

IP development across use cases 2004 - 2013

Previous ten years of patent filings

Source: Thomson Reuters, Quid, iff
Innovations overlap with one another. It won’t just be advances in a single field that change the world or impact our daily lives. It will be combinations of advances, across fields, that do. Understanding this, helps put today’s innovations into perspective for tomorrow.
Thank you!