The pandemic could help FOSS, but was a win for proprietary software

Italo Vignoli
Growth of FOSS Code

Today, most application code is open source

1998: 10% Open Source
2005: 20% Open Source
2010: 50% Open Source
TODAY: Up to 90% Open Source
Linux Market Share

Device Type: Desktop/Laptop
Google: Filters your thoughts
Apple: Knows where your mom is
Facebook: Chooses what you read
Amazon: Knows what presents you are getting
Microsoft: Formats your kids
Big Tech Keeps Getting Bigger

GAFAM revenue in the first nine months of 2021 vs. 2020 (in billion U.S. dollars)

<table>
<thead>
<tr>
<th>Company</th>
<th>2020 to-date</th>
<th>2021 to-date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amazon</td>
<td>260.5</td>
<td>332.4</td>
</tr>
<tr>
<td>Apple</td>
<td>182.7</td>
<td>254.4</td>
</tr>
<tr>
<td>Alphabet</td>
<td>125.6</td>
<td>182.3</td>
</tr>
<tr>
<td>Microsoft</td>
<td>110.2</td>
<td>133.2</td>
</tr>
<tr>
<td>Meta</td>
<td>57.9</td>
<td>84.2</td>
</tr>
</tbody>
</table>

Source: Company filings
Overseas Dominance

Market cap of U.S. tech giants compared to the most valuable European companies (as of Nov. 25, 2021)

- $2,657b Apple
- $2,537b Microsoft
- $1,943b Alphabet
- $1,816b Amazon
- $949b Meta
- $411b LVMH
- $358b Nestlé
- $335b Roche
- $332b ASML
- $259b L’Oréal

Source: Yahoo! Finance
<table>
<thead>
<tr>
<th>Company</th>
<th>Amount (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td>5,750,000</td>
</tr>
<tr>
<td>Facebook Ireland Limited (FB-I)</td>
<td>5,500,000</td>
</tr>
<tr>
<td>Microsoft Corporation</td>
<td>5,250,000</td>
</tr>
<tr>
<td>Apple Inc.</td>
<td>3,500,000</td>
</tr>
<tr>
<td>Huawei Technologies (Huawei)</td>
<td>3,000,000</td>
</tr>
<tr>
<td>Amazon Europe Core SARL</td>
<td>2,750,000</td>
</tr>
<tr>
<td>IBM Corporation (IBM)</td>
<td>1,750,000</td>
</tr>
<tr>
<td>Intel Corporation</td>
<td>1,750,000</td>
</tr>
<tr>
<td>QUALCOMM Incorporated*</td>
<td>1,750,000</td>
</tr>
<tr>
<td>Vodafone Belgium SA (VBSA)</td>
<td>1,750,000</td>
</tr>
</tbody>
</table>

*(QCOM (NASDAQ))
Tech Giants Ramp Up Lobbying In Face of Antitrust Scrutiny

Annual lobbying expenditure of selected tech companies in the U.S.

- **Facebook**:
  - 2010: $19.7m
  - 2015: $9.1m
  - 2020: $2.1m
  - Source: Senate Office of Public Records
  - *excl. some subsidiaries

- **Amazon**:
  - 2010: $9.9m
  - 2015: $5.2m
  - 2020: $1.6m

- **Alphabet**:
  - 2010: $17.9m
  - 2015: $7.5m
  - 2020: $4.5m

- **Apple**:
  - 2010: $0.4m
  - 2015: $16.7m
  - 2020: $6.7m

*Statista*
Network of Lobbyists

Consulting firms working for the GAFAM in Brussels and their network
MEETINGS WITH THE EU-COMMISSION ON THE DSA/DMA

NUMBER OF MEETINGS: 271

- Companies & groups (48.71 %)
- Trade and business associations and professional associations (25.83 %)
- NGOs, consumer organisations and trade unions (19.19 %)
- Other public or mixed entities, created by law whose purpose is to act in the public interest (11.11 %)
- Think tanks and research institutions (4.88 %)
- Other organisations (1.48 %)
- Professional consultancies (2.21 %)
Impact of Lobby Budgets

- These huge lobbying budgets have a significant impact on EU policy-makers, who find digital lobbyists knocking on their door on a regular basis (more than 140 lobbyists work for the largest ten digital firms in Brussels and spend more than €32 million on making their voice heard)

- Big Tech companies don’t just lobby on their own behalf, but they also employ an extensive network of lobby groups, consultancies, and law firms representing their interests, not to mention a large number of think tanks and other groups financed by them
Consequences of Lobbying

Academic and Big Tech critic Shoshana Zuboff affirms that lobbying – alongside establishing relationships with elected politicians, and a campaign for cultural and academic influence – has acted as the fortification that has allowed a business model built on violating people’s privacy and unfairly dominating the market, to flourish without being challenged.
Human Genes Renamed To Please Excel

Written by Janet Swift
Friday, 07 August 2020

More than two dozen human genes have been renamed so that they can be typed into a spreadsheet without being formatted as dates. New guidelines for standardized gene naming explicitly allow for renaming genes to avoid problems with data handling.
EC OSS Adoption Maturity Index

1. No open source
   - We use open source software on our desktop: 60%
   - We use open source software in our Data Centre: 20%
   - We use open source web and social tools to collaborate: 10%
   - We use open source tools and methods to develop software: 10%
   - We provide software based on open source license: 10%

2. Ad hoc
   - Proprietary desktop, but open source browser and tools: 7%

3. Local policy
   - Widespread open source use with some policy support: 33%
   - Dual policy for internal and external tools: 8%
   - Growing usage of open source frameworks & libraries: 5%
   - EC-produced software distributed open source: 8%

4. EC policy
   - 60%
   - 20%
   - 30%
   - 30%
   - 20%

5. Drive change
   - 10%
   - 10%
   - 10%
   - 10%
   - 10%
When looking for news do you (select all that apply):

- Google it
- Visit a specific online news site (i.e., NY Times, CNN)
- Turn on the TV
- Pick up a newspaper
- Call family members/friends
- Go to Facebook
- Search Twitter
- none of these
The Cycle

The computer learns to recognize patterns in historical data.

The learned machine looks for learned patterns.

When it encounters a familiar pattern, it predicts likely future developments.
DATA BROKERS HAVE EXTENSIVE PROFILE INFORMATION ON ENTIRE POPULATIONS

Examples of data on consumers provided by Acxiom and Oracle

Acxiom provides up 3,000 attributes and scores on 700 million people in the US, Europe, and other regions.

Oracle sorts people into thousands of categories and provides >30,000 attributes on 2 billion consumer profiles.
What Would Change with FOSS

• By switching to FOSS for desktop productivity and cloud storage, European governments would regain control of citizen's personal data and manage them according to their confidentiality.
• In addition, switching to FOSS would include moving from proprietary to standard document formats, with a significant advantage in term of interoperability.
Proprietary versus FOSS

• Proprietary software protects the user by obfuscating algorithms and information, but in this way they also obfuscate the way they handle end user data

• FOSS protects the user with transparency, by sharing source code and all information about methodologies used by projects to manage end user data
Politicians – who are not technology experts – see GAFAMs as part of the global system, and therefore consider their issues as blockers for the entire digital transformation process (and try to help them).

On the contrary, politicians – because of their limited understanding of technology – do not see FLOSS as part of the global system, and as a consequence do ignore FLOSS as a potential solution.
Situation with Proprietary SW

• A large percentage of governments in Europe - at every level – rely on proprietary software for desktop productivity and cloud storage of data, independently from the level of confidentiality

• This puts citizen's personal data, including several extremely confidential information (health) at risk

• This is confirmed by the recent Schrems II sentence from the Court of Justice of the European Union
## Awareness of SCC* (Schrems II)

<table>
<thead>
<tr>
<th>Employees</th>
<th>Aware SCC users</th>
<th>Not transferring personal data outside of the EU</th>
<th>Unaware SCC users</th>
<th>Use other transfer mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,000+ employees</td>
<td>83%</td>
<td>12%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>250 – 1,999 employees</td>
<td>60%</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMEs 1 - 249 employees</td>
<td>32%</td>
<td>39%</td>
<td>20%</td>
<td></td>
</tr>
</tbody>
</table>

*SCC = Standard Contractual Clauses (for data protection) when transferring data to the US*

Source: DIGITALEUROPE | Base: All respondents (n = 292)
Reliance on SCC* (Schrems II)

SMEs
(1 to 249 employees)

(250 to 1,999 employees)

(2,000+ employees)

70%

90%

95%

* SCC = Standard Contractual Clauses (for data protection) when transferring data to the US

Source: DIGITALEUROPE I Base: estimated SCC users (n = 249)
Cost of Reassessing SCC*

- High: 47%
- Moderate: 46%
- Negligible: 8%

Source: DIGITALEUROPE | Base: respondents that reassessed their use of SCCs (n = 129)

* SCC = Standard Contractual Clauses
Interoperability is the ability of information and communication technology (ICT) systems, as well as of the business processes they support, to exchange data and enable the sharing of information and knowledge.

*European Interoperability Framework, IDABC*
Lock In

WE CANNOT READ YOUR DOCUMENTS

LOCK-IN

DOCUMENTFREEDOM.ORG
Document Vulnerabilities in 2018

Targeted platforms by attacked users

2016 Q4
- Browsers: 45%
- PDF: 1%
- Java: 6%
- Adobe Flash: 13%
- Android: 19%
- Office: 16%

2018 Q4
- Browsers: 14%
- PDF: 0%
- Java: 3%
- Adobe Flash: 1%
- Android: 12%
- Office: 70%

Source: Kaspersky Labs, 2019
Interoperable File Format

Software A

Software B

Software C

Software D
Surveillance Capitalism

THE AGE OF SURVEILLANCE CAPITALISM

THE FIGHT FOR A HUMAN FUTURE AT THE NEW FRONTIER OF POWER

SHOSHANA ZUBOFF
What is at stake here is the human expectation of sovereignty over one’s own life and authorship of one’s own experience.

Shoshana Zuboff, The Age of Surveillance Capitalism