Privacy, AllJoyn, IoT:
Why proximal networks are better

JAMES KANE
Co-Founder, Two Bulls
Privacy concerns the information that we allow people to access and how they are allowed to use it.

Security (should) ensure the decisions we make are respected.
“Privacy is not simply an absence of information about us in the minds of others; rather it is the control we have over information about ourselves.”

1. The Origin Story
2. The Fundamentals
3. The Current Landscape
4. The Proximal Advantage
5. A Way Forward for the Alliance
“The intensity and complexity of life, attendant upon advancing civilization, have rendered necessary some retreat from the world, and man, under the refining influence of culture, has become more sensitive to publicity, so that solitude and privacy have become more essential to the individual; but modern enterprise and invention have, through invasions upon his privacy, subjected him to mental pain and distress, far greater than could be inflicted by mere bodily injury.”

"The Right to Privacy" 4 Harvard L.R. 193 (Dec. 15, 1890)
1900s

• The right to be let alone

• the option to limit the access others have to one's personal information

• secrecy, or the option to conceal any information from others

• control over others' use of information about oneself

• the idea of personhood

• protection of intimate relationships
1970
"You can lie to me, you can lie to your trainer, you can even lie to yourself, but you can't lie to your Fitbit."
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The Basics

• Privacy exists...
  – where there is an expectation of privacy … the home is the classic example.
  – and it concerns ‘any information relating to an identified or identifiable natural person’.

• Notice and consent
  – The fundamental rule is that you must disclose the uses you are going to make of information and obtain consent for those uses.
    • Increasingly it’s about more than just clicking on an agreement

• Data Minimisation
  – Collecting, using, disclosing, and storing the minimal data necessary to perform a task. Reducing the amount of data exchanged reduces the amount of data that can be misused or leaked.
Privacy by Design

1. being proactive not reactive;

2. having privacy as the default setting;

3. having privacy embedded into design;

4. avoiding the pretence of false dichotomies, such as privacy vs. security;

5. providing full life-cycle management of data;

6. ensuring visibility and transparency of data; and

7. being user-centric.
1. **Management** The entity defines, documents, communicates and assigns accountability for its privacy policies and procedures.

2. **Notice** The entity provides notice about its privacy policies and procedures and identifies the purposes for which personal information is collected, used, retained and disclosed.

3. **Choice and consent** The entity describes the choices available to the individual and obtains implicit or explicit consent with respect to the collection, use and disclosure of personal information.

4. **Collection** The entity collects personal information only for the purposes identified in the notice.

5. **Use, retention and disposal** The entity limits the use of personal information to the purposes identified in the notice and for which the individual has provided implicit or explicit consent. The entity retains personal information for only as long as necessary to fulfill the stated purposes or as required by law or regulation and thereafter appropriately disposes of such information.

6. **Access** The entity provides individuals with access to their personal information for review and update.

7. **Disclosure to third parties** The entity discloses personal information to third parties only for the purposes identified in the notice and with the implicit or explicit consent of the individual.

8. **Security for privacy** The entity protects personal information against unauthorized access (both physical and logical).

9. **Quality** The entity maintains accurate, complete and relevant personal information for the purposes identified in the notice.

10. **Monitoring and enforcement** The entity monitors compliance with its privacy policies and procedures and has procedures to address privacy-related complaints and disputes.
Categories of IoT Data

• **self-reported data** - information people volunteer about themselves, such as their email addresses, work and educational history, and age and gender

• **digital exhaust** - such as location data and browsing history, which is created when using mobile devices, web services, or other connected technologies; and

• **profiling data** - personal profiles used to make predictions about individuals’ interests and behaviors, which are derived by combining self-reported, digital exhaust, and other data.

https://hbr.org/2015/05/customer-data-designing-for-transparency-and-trust
Commercial Uses of Data

- *Making a product or service better* - eg allowing a map application to recommend a route based on a user’s location

- *Facilitating targeted marketing or advertising* - ie ads based on a user’s browsing history

- *Generating revenues through resale* - eg selling credit card purchase data to third parties.

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## IoT Enthusiasm

<table>
<thead>
<tr>
<th>Emerging Technology On Quality Of Life</th>
<th>Mostly Positive</th>
<th>Mixed</th>
<th>Mostly Negative</th>
<th>No Real Impact</th>
<th>DK/REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>37. GPS-connected cars, phones, and other devices that track location</td>
<td>50%</td>
<td>31%</td>
<td>15%</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>36. Online connectivity of things in your home like appliances, lights, thermostats, and locks</td>
<td>43%</td>
<td>33%</td>
<td>18%</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>34. Ever-smaller mobile devices to connect to the Internet, like watches and glasses</td>
<td>24%</td>
<td>36%</td>
<td>28%</td>
<td>10%</td>
<td>3%</td>
</tr>
<tr>
<td>35. Driverless cars</td>
<td>24%</td>
<td>30%</td>
<td>38%</td>
<td>4%</td>
<td>4%</td>
</tr>
</tbody>
</table>
## IoT Concerns

<table>
<thead>
<tr>
<th>Digital Revolution’s Effect (Ranked By Mostly Positive)</th>
<th>Mostly Positive</th>
<th>Mixed</th>
<th>Mostly Negative</th>
<th>No Real Impact</th>
<th>DK/REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Your ability to stay in touch with people important to you</td>
<td>79%</td>
<td>14%</td>
<td>4%</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>19. Your ability to obtain information and news about issues important to you</td>
<td>75%</td>
<td>17%</td>
<td>4%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>24. Community and volunteer organizations</td>
<td>65%</td>
<td>23%</td>
<td>6%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>25. Small business owners</td>
<td>59%</td>
<td>22%</td>
<td>12%</td>
<td>2%</td>
<td>5%</td>
</tr>
<tr>
<td>17. Your own personal quality of life</td>
<td>55%</td>
<td>33%</td>
<td>7%</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>26. American consumers (Sample B; N=504)</td>
<td>54%</td>
<td>34%</td>
<td>10%</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>21. The economy in your local community (Sample A; N=496)</td>
<td>41%</td>
<td>38%</td>
<td>13%</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>22. The country’s economy (Sample B; N=504)</td>
<td>39%</td>
<td>38%</td>
<td>18%</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>23. The American Middle Class (Sample A; N=496)</td>
<td>38%</td>
<td>41%</td>
<td>16%</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>27. America’s young people (Sample B; N=504)</td>
<td>28%</td>
<td>38%</td>
<td>31%</td>
<td>*</td>
<td>3%</td>
</tr>
<tr>
<td>20. Your privacy</td>
<td>17%</td>
<td>34%</td>
<td>44%</td>
<td>4%</td>
<td>1%</td>
</tr>
</tbody>
</table>
Attitudes to Privacy

**Americans Hold Strong Views About Privacy in Everyday Life**

In response to the following question: “Privacy means different things to different people today. In thinking about all of your daily interactions – both online and offline – please tell me how important each of the following are to you…”

<table>
<thead>
<tr>
<th>% of adults who say ...</th>
<th>Very important</th>
<th>Somewhat important</th>
<th>Not very important</th>
<th>Not at all important</th>
<th>Don’t know</th>
<th>NET Important</th>
<th>NET Not Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being in control of who can get info about you</td>
<td>74%</td>
<td>19%</td>
<td>311</td>
<td>93%</td>
<td>4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being able to share confidential matters with someone you trust</td>
<td>72</td>
<td>21</td>
<td>211</td>
<td>93</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not having someone watch you or listen to you without your permission</td>
<td>67</td>
<td>20</td>
<td>8</td>
<td>12</td>
<td>88</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Controlling what information is collected about you</td>
<td>65</td>
<td>25</td>
<td>11</td>
<td>90</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not being disturbed at home</td>
<td>56</td>
<td>29</td>
<td>9</td>
<td>22</td>
<td>85</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Being able to have times when you are completely alone, away from anyone else</td>
<td>55</td>
<td>30</td>
<td>9</td>
<td>22</td>
<td>85</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Having individuals in social/work situations not ask you things that are highly personal</td>
<td>44</td>
<td>36</td>
<td>13</td>
<td>2</td>
<td>79</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Being able to go around in public without always being identified</td>
<td>34</td>
<td>25</td>
<td>6</td>
<td>4</td>
<td>63</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Not being monitored at work</td>
<td>28</td>
<td>22</td>
<td>6</td>
<td>15</td>
<td>56</td>
<td>27</td>
<td></td>
</tr>
</tbody>
</table>


PEW RESEARCH CENTER
In who do we trust?

### Do They Trust You with Their Data?

Percentages of consumers who said that each category of organization was “trustworthy” or “completely trustworthy” when it came to making sure that personal data was never misused.

<table>
<thead>
<tr>
<th>Category</th>
<th>Trust Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care doctors</td>
<td>87%</td>
</tr>
<tr>
<td>Payment or credit card companies</td>
<td>85%</td>
</tr>
<tr>
<td>E-commerce firms</td>
<td>80%</td>
</tr>
<tr>
<td>Consumer electronics firms</td>
<td>77%</td>
</tr>
<tr>
<td>Insurance companies</td>
<td>76%</td>
</tr>
<tr>
<td>Banks</td>
<td>76%</td>
</tr>
<tr>
<td>Telecom carriers</td>
<td>73%</td>
</tr>
<tr>
<td>Technology firms</td>
<td>70%</td>
</tr>
<tr>
<td>Internet giants (such as Google and Yahoo)</td>
<td>68%</td>
</tr>
<tr>
<td>Governments</td>
<td>66%</td>
</tr>
<tr>
<td>Media and entertainment companies</td>
<td>61%</td>
</tr>
<tr>
<td>Social media firms</td>
<td>56%</td>
</tr>
</tbody>
</table>

**Source:** Timothy Morey, Theodore “Theo” Forbath, and Allison Schoop from “Customer Data: Designing for Transparency and Trust,” May 2015

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We see that privacy is a fundamental human right that people have …

Our view on this comes from a values point of view, not from a commercial interest point of view …

… our customers are not our products. We don't collect a lot of your data and understand every detail about your life. That's just not the business that we are in.

Tim Cook, Apple CEO, NPR October 1st 2015
Nest; an Alphabet company
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A House of Mirrors
Local vs the Cloud

• There is a significant difference between information stored locally and information stored in the cloud.
  — After 180 days in the U.S., email messages stored on a third party server lose their status as a protected communication under the Electronic Communications Privacy Act, and become just another database record

• The home is the last redoubt of privacy
  — is the cloud in your home?
Standalone AllJoyn Network

AllJoyn Device 1 (Provider)

AllJoyn Device N (Provider)

AllJoyn Device 2 (Consumer)

AllJoyn Device 3 (Provider and Consumer)

AllJoyn Device 4 (Consumer)
Remote Accessible AllJoyn Network

Cloud Services

Internet

Mobile Device (Remote Access)

AllJoyn Network

AllJoyn Device 1 (Provider)

Gateway Node

AllJoyn Device 3 (Provider and Consumer)

AllJoyn Device 2 (Consumer)

AllJoyn Device 4 (Consumer)
1. The Origin Story
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5. **A Way Forward for the Alliance**
Two Way Street

Established Members → Start Up Members ↔ Consumers
A Tiered Approach

- AllSeen Alliance consumer ratings
- Members’ own privacy policy or adopt Alliance standard
- Minimum privacy policy requirements for certification
Privacy Policy for Certification

• Meets regional minimum standards (EU GDPR, US FTC et. al, etc)

• Required for certification

• Monitoring compliance/reporting violations

• Enforceable through the Alliance

• An Alliance-wide technical solution?

Minimum privacy policy requirements for certification
Existing & Standard Policies

• Need to accommodate existing privacy policies

• A process to assess Members’ existing policies

• Adopting the Alliance standard policy will automatically qualify for certification

• Need to effectively communicate privacy obligations to members

Members’ own privacy policy or adopt Alliance standard
Consumer Ratings

No data leaves the proximal network.

Data is only used by our company to improve the product experience.

3rd parties may have access to your data or enjoy the benefit of it - more information.
Next Steps

A Forum for the Issues
We need a forum where we can move this forward. How is this going to be structured and who will be involved?

Develop Standard Alliance Privacy Policy
Work on a global standard that passes regional requirements.

Develop Certification, Monitoring & Enforcement Policy
How will non-standard policies be assessed? How will compliance be monitored and enforced?

Discuss Desirability of Consumer Ratings
Work on a proposal for Alliance privacy ratings. Consider partnerships with existing industry bodies.
Thank You

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