

Distrust of big tech and a desire for privacy: Understanding the motivations of people who have voluntarily adopted secure email

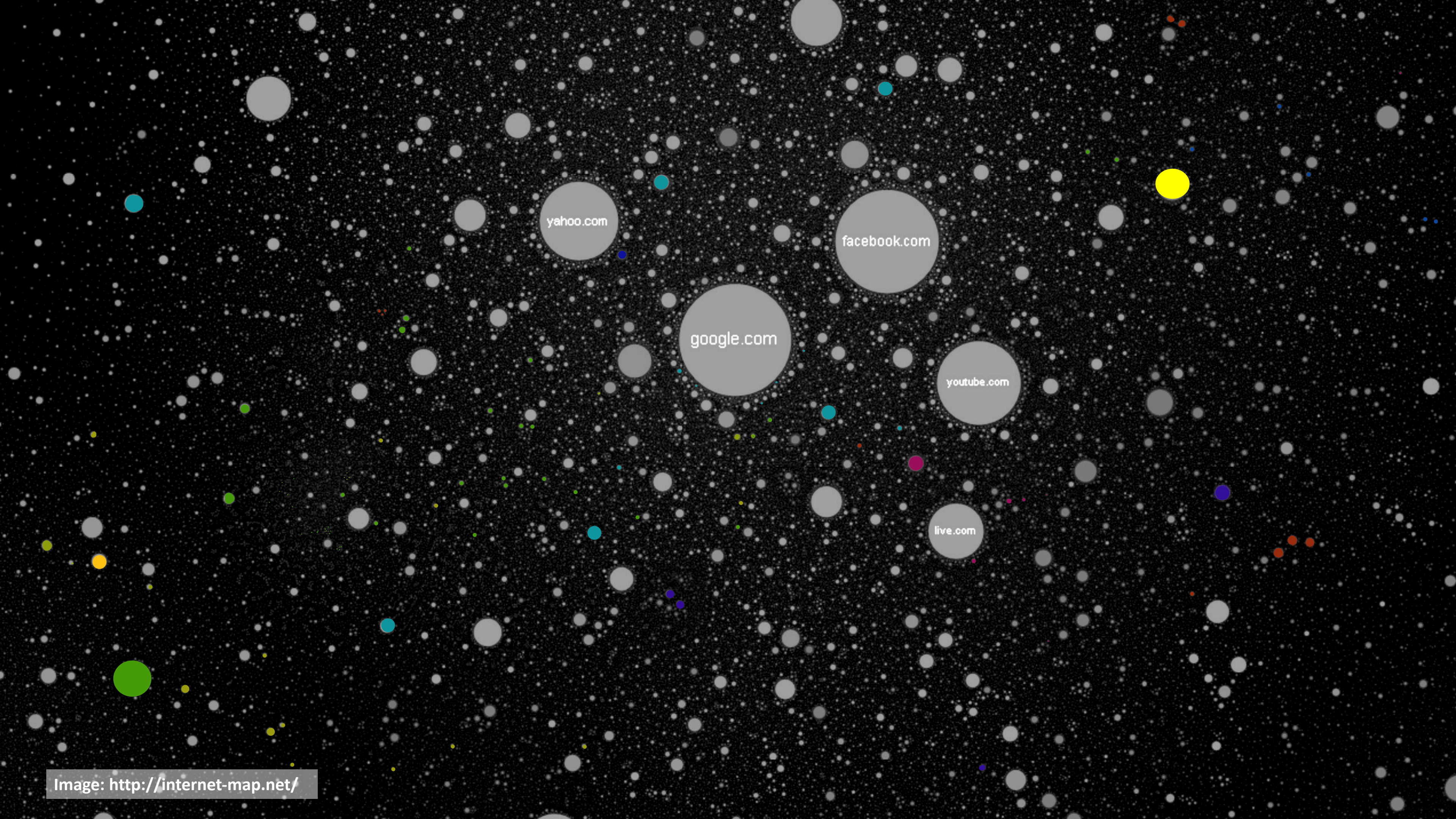
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Non-users of secure email and reasons for non-adoption

- Incomplete mental models
- Lack of motivation
- Fragmented threat models
- Inconvenience

Usability of secure email

- Early work – PGP-based secure emails systems not very usable
- Series of efforts to improve usability of secure email
- Current systems like Proton Mail and Tutanota



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Users of secure email and their motivations

What works?

Research Questions

Motivation

Why do people voluntarily adopt secure email systems?

Threat Models

What threat models do people have?

Mental Models

What mental models do people have of secure email systems and their capabilities?

Usage

Do people use the secure email services effectively and what obstacles they encounter in trying to do so?

Methods



Screening survey
n = 1708



Semi-structured interview
n = 25

Recruitment



Google Ads

Demographics

ID	Age	Country	Gender	Education Level	Tech Background	Using for	Frequency of Usage
R1	35-44	United States	Male	G/PD	Yes	5+ years	Daily
R2	45-54	United States	-	G/PD	Yes	5+ years	Daily
R3	45-54	United States	Male	BA/BS	Yes	5+ years	Weekly
R4	45-54	United States	Male	BA/BS	Yes	5+ years	Weekly
R5	45-54	Australia	Male	G/PD	Yes	5+ years	Daily
R6	45-54	United States	Female	BA/BS	No	5+ years	Daily
R7	25-34	United States	Male	G/PD	No	2-3 years	Weekly
R8	25-34	United States	Male	BA/BS	Yes	5+ years	Monthly
P9	35-44	Canada	Male	G/PD	No	few months	Daily
P10	25-34	Portugal	Female	G/PD	No	1 year	1-2 times a year
P11	18-24	Poland	Male	HS	No	2-3 years	Monthly
P12	35-44	Mexico	Non-Binary	BA/BS	Yes	5+ years	Monthly
P13	25-34	Portugal	Male	BA/BS	No	2-3 years	1-2 times a year
P14	25-34	Netherlands	Male	G/PD	No*	1 year	Weekly
P15	35-44	United Kingdom	Female	G/PD	No	2-3 years	Daily
P16	18-24	Spain	Male	Some college	Yes	1 year	Weekly
P17	25-34	Poland	Male	G/PD	Yes	few months	1-2 times a year
P18	25-34	Mexico	Male	BA/BS	Yes	5+ years	Monthly
P19	25-34	Switzerland	Non-binary	HS	No	5+ years	Daily
P20	25-34	Australia	Male	G/PD	No	5+ years	1-2 times a year
P21	25-34	Greece	Male	G/PD	No	5+ years	Weekly
P22	25-34	Mexico	Male	BA/BS	No	5+ years	Weekly
P23	25-34	Japan	Male	BA/BS	Yes	1 year	Monthly
P24	18-24	Poland	Male	HS	Yes	2-3 years	1-2 times a year
P25	18-24	Poland	Male	Some college	No	1 year	Daily

Findings

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Distrust of Big Tech

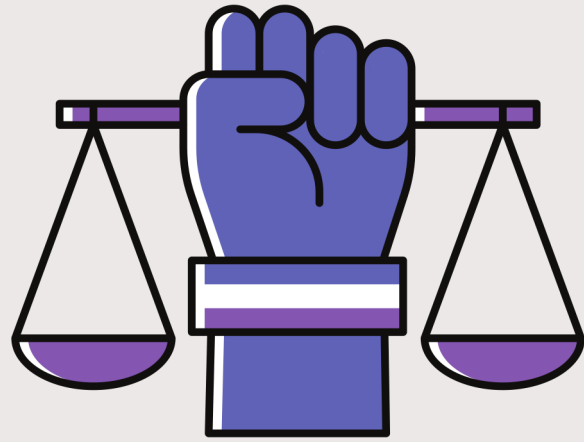
“

“Over the past few years, I’ve been trying to wean myself off of Google and other, you know, big tech products, Because they are kind of, I think they’re poisoning my mind.” (R1)

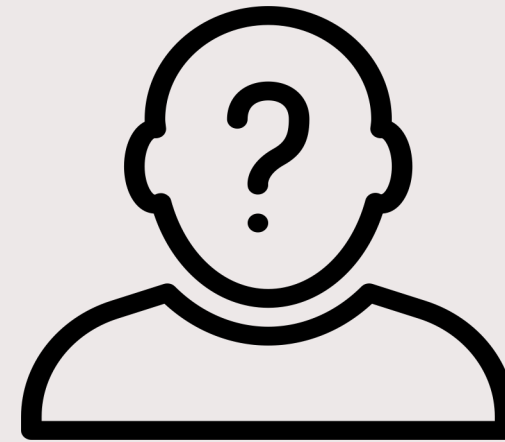
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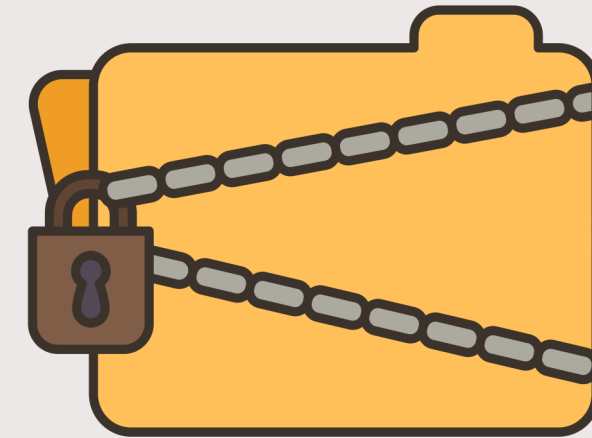
Privacy



Privacy as a
fundamental right



Privacy as
anonymity



Privacy as
secrecy



Privacy as control



Privacy as a
commodity

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Government and Intelligence Agencies

What could happen:

- Surveillance
 - The Five Eyes Alliance countries (Canada, Australia, New Zealand, the United Kingdom, and the United States)
- Requiring the surrender of data

Mitigations:

- Use secure emails outside government reach
- ProtonMail based in Switzerland and Tutanota based in Germany helps.



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Mental Models

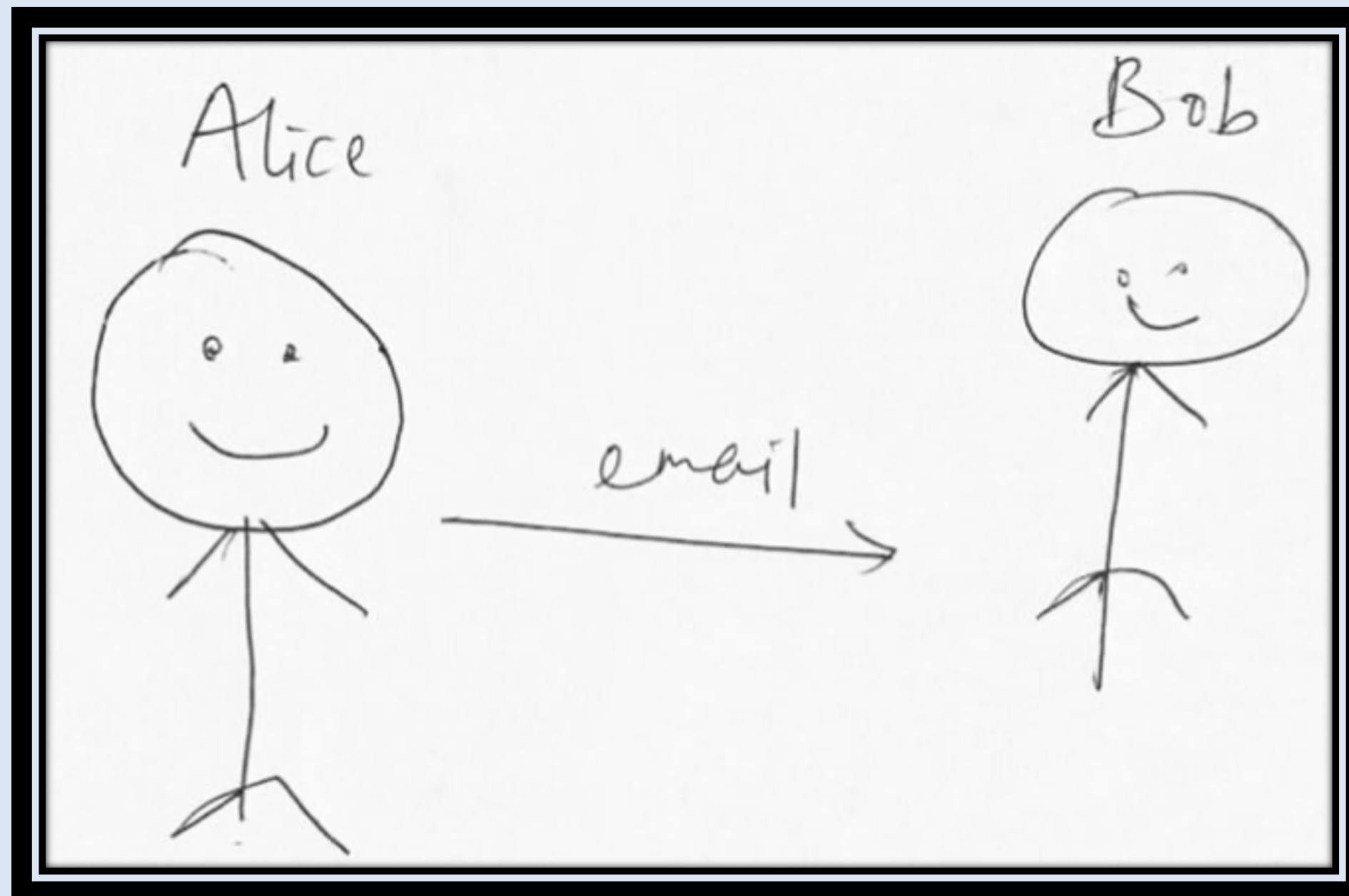
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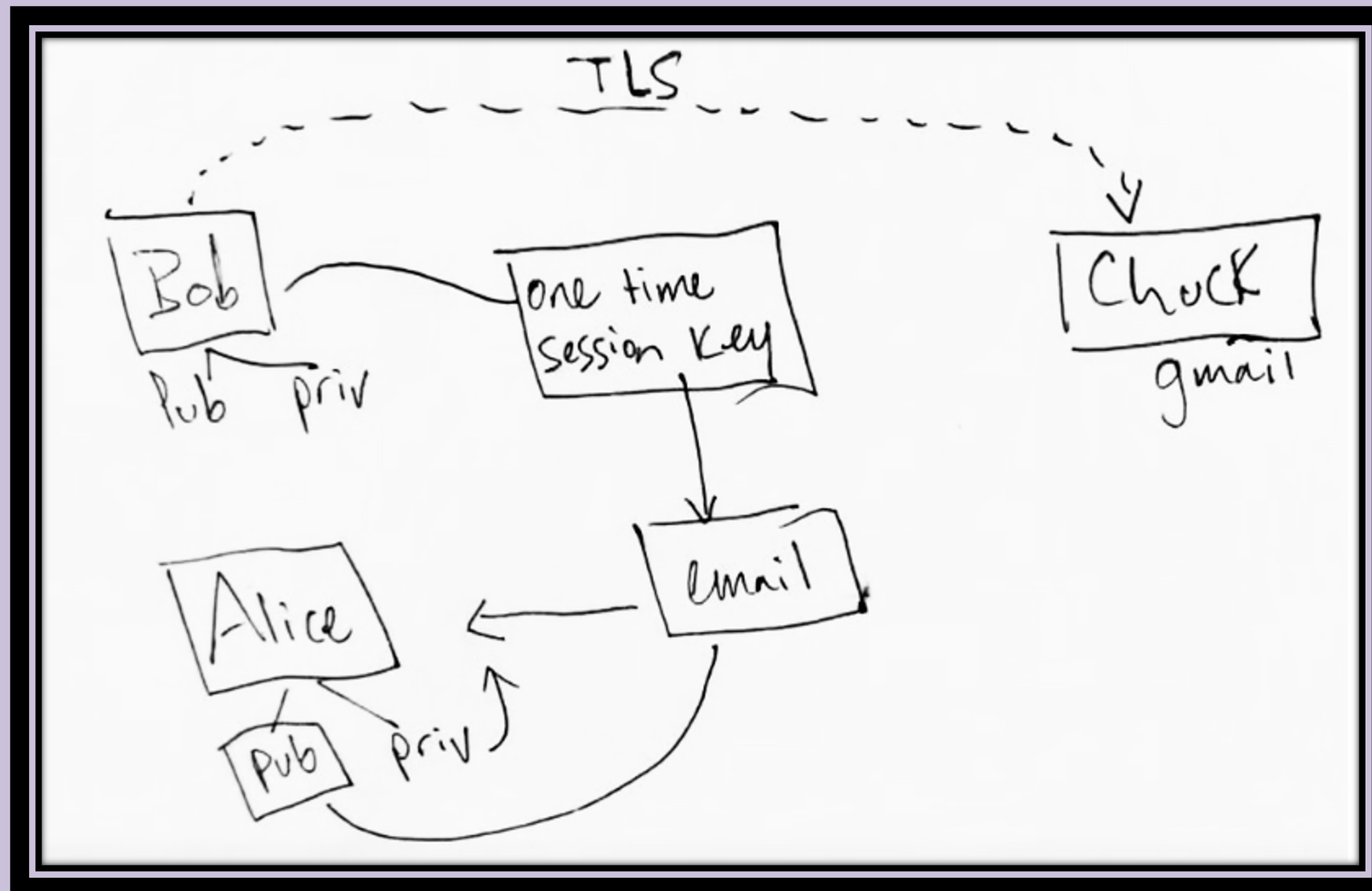
Mentals Models

A safer, more trustworthy system



Mentals Models

A private, encrypted system



Motivation

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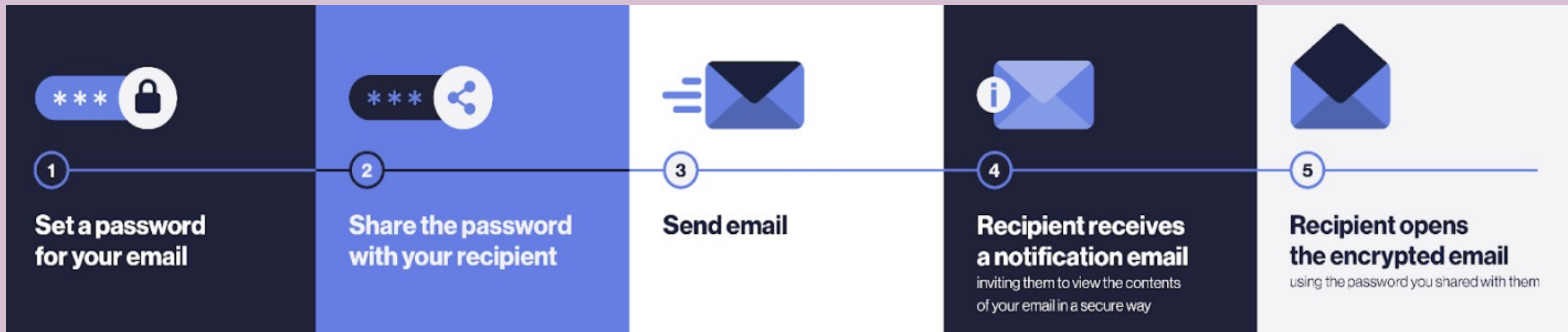
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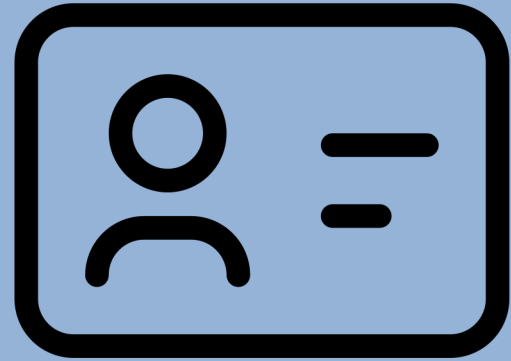
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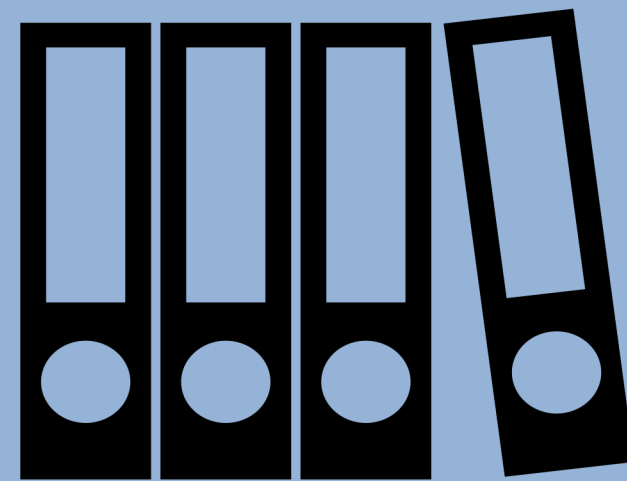
How do our participants send emails to users with non-encrypted services?



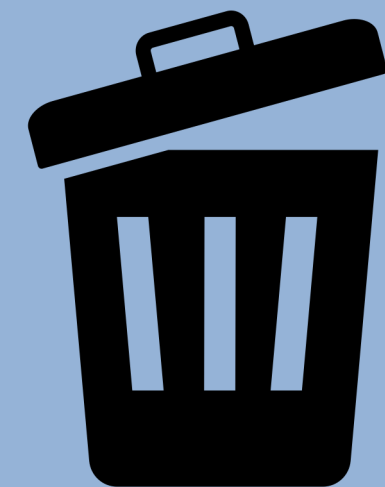
Uses go beyond just sending and receiving emails



Identity management



Email Compartmentalization



Disposable email

- Fb marketplace
- Cryptocurrency
- Gaming

Key Takeaways



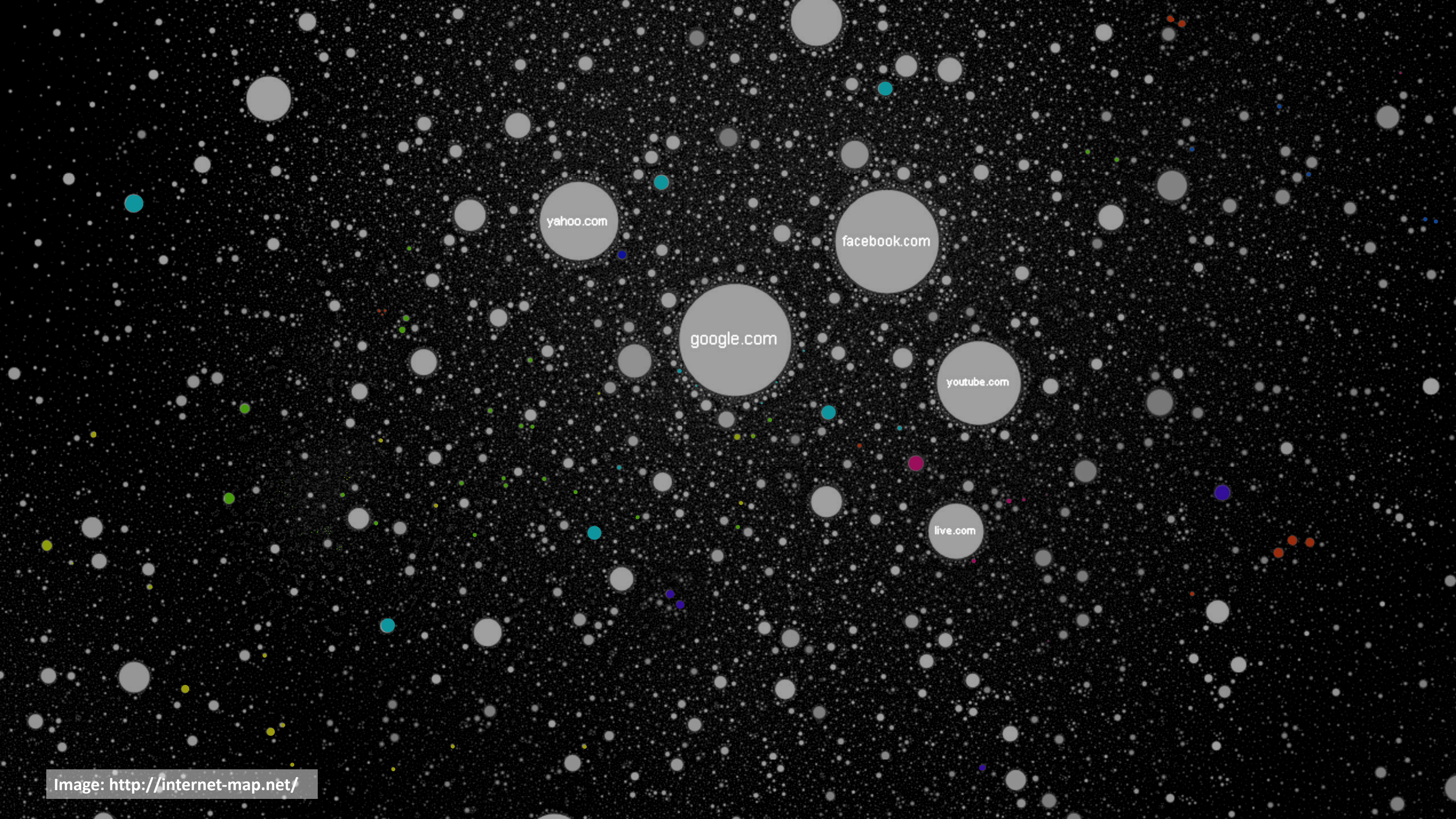
Privacy is a key
motivation



Privacy benefits
are broad



Privacy
benefits can
be expanded



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Read our paper



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