Internet of Things

EU Competition Law Briefing

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Agenda

Introduction

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Types of Devices Covered

Findings

What next, and final comments…

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Background to IoT Inquiry and Preliminary Report

Some Background on EU Sector Inquiries

WHAT are sector inquiries (SI)?
Investigations the EC carries out into sectors of the economy and into types of agreements across various sectors, when it believes that a market is not working as well as it should, and also believes that breaches of the competition rules might be a contributory factor

WHY does the EC carry out SIs?
The EC uses the information obtained in an inquiry to understand a particular market better from the point of view of competition policy, and this may lead to opening specific investigations

HOW does the EC carry out SIs?
The EC can ask for information by RFI from businesses or business associations, such as price information, and others including contracts

WHAT is the result?
A preliminary report, then a final report. And potentially AT investigations... including potential dawn raids, infringement decisions and fines

Background to IoT Inquiry and Preliminary Report

IoT SI Launch

SI launched July 2020

RFIs sent to 400 players with 130 to 150 questions

- Smart device manufacturers
- Software developers
- Patent holders
- On-line service providers
- Related service providers...

Information reviewed including

- Responses to RFIs
- Over 1000 agreements
- From all sizes of companies across the globe
- In addition to standard setting and industry organisations relevant to IoT

Areas of Interest and Themes
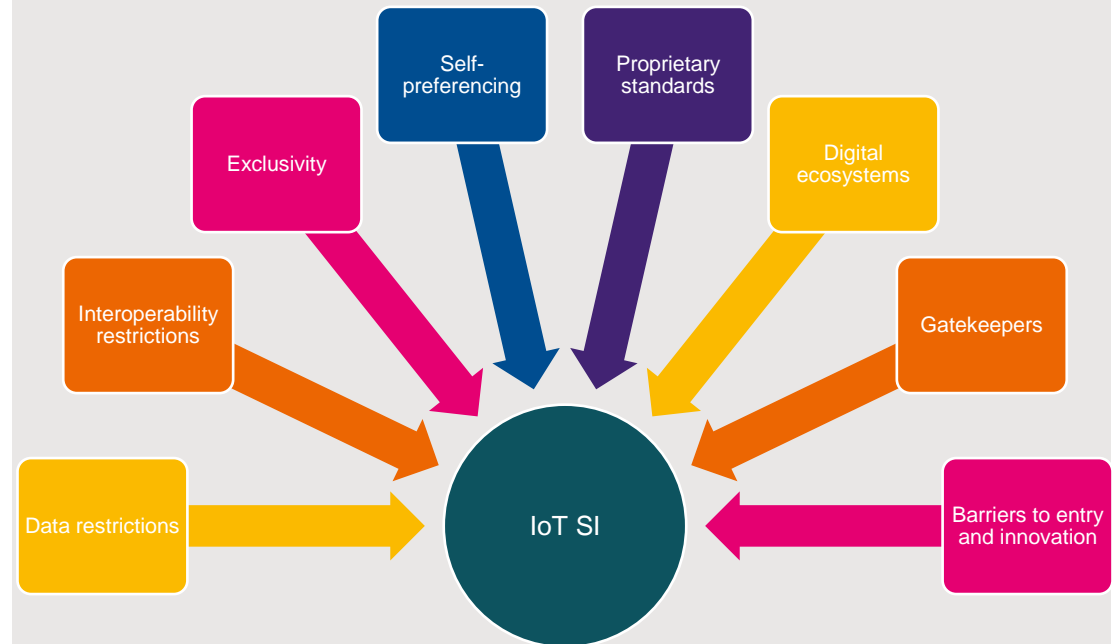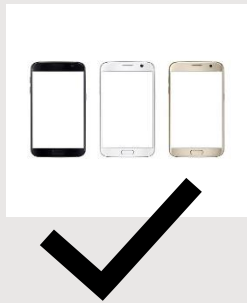
Types of Devices Covered

What is it about?

– Relevant product groups
  - Products and services
  - Smart home consumer devices
  - (NOT connected cars)

Different situations with different products
Few voice assistants
Many competitors smart devices and consumer IOT services

IoT Sector Growth

– Consumer IoT grown rapidly in recent years and set to continue

– WW revenues €107.2 billion in 2019 to grow to €408.7 billion in 2030

– 51% EU individuals use internet on smart TV/games console, home audio system, or smart speakers

– Voice assistants becoming key gateways to smart houses
  - Use 4.2 billion in 2020 to increase to 8.4 billion in 2024

– Smart mobile app remains most used IoT user interface

Voice Assistants

General-purpose voice assistants	Specialised voice assistants

General-purpose voice assistants

- **Broad range of functions**
  - Play music, videos other content
  - Controll smart home devices
  - Provide information
  - Organize daily routines
- Alexa (Amazon), Bixby (Samsung), Google Assistant (Google), Siri (Apple)

Specialised voice assistants

- **Limited functionality**
  - Access to smart home device manufacturer's / service provider's services
- Djingo (Orange), Cortana (Microsoft), Magenta (Deutsche Telekom), Aura (Telefónica)

- **User interaction**
  - Activation → instruction → processing → trigger / response
  - Languages

Smart devices

Smart home devices

- **Home devices capable of connecting to other devices or networks**
  - Smart household appliances
  - Smart home entertainment
  - Comfort and lighting devices
  - Security devices

- **User interaction**
  - Manufacturer's smart home application
  - User interfaces
  - Voice Assistants (Google Assistant, Alexa and Siri)

Wearables

- **Electronic devices that can be worn and which can send and receive data wirelessly**
  - Generally include sensors powered by operating systems
  - Earn-worn devices, wrist-worn devices
  - Other wearable items: smart clothes/shoes, smart glasses, VR headsets
  - Numerous functions, can often function as user interfaces for other devices

- **User interaction**
  - Manufacturer's apps
  - User interfaces
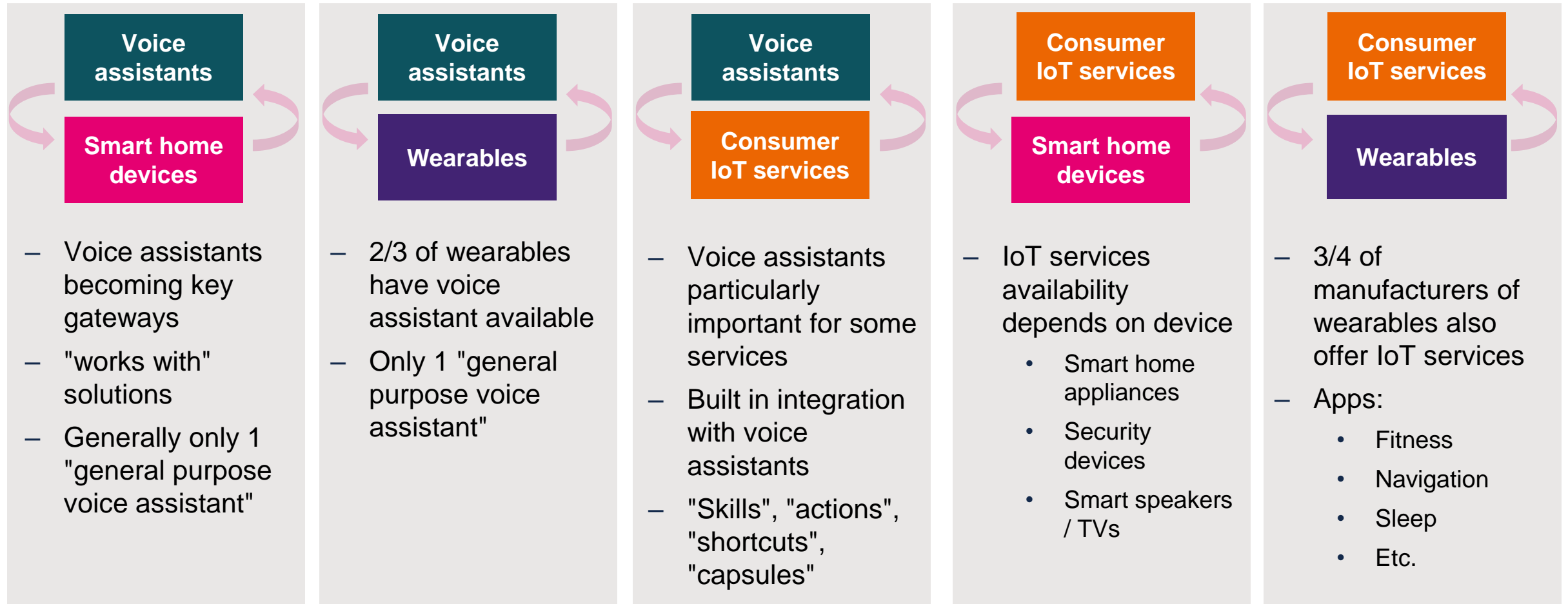 - Voice Assistants (Google Assistant, Alexa, Siri)

Consumer IoT services

Consumer IoT services
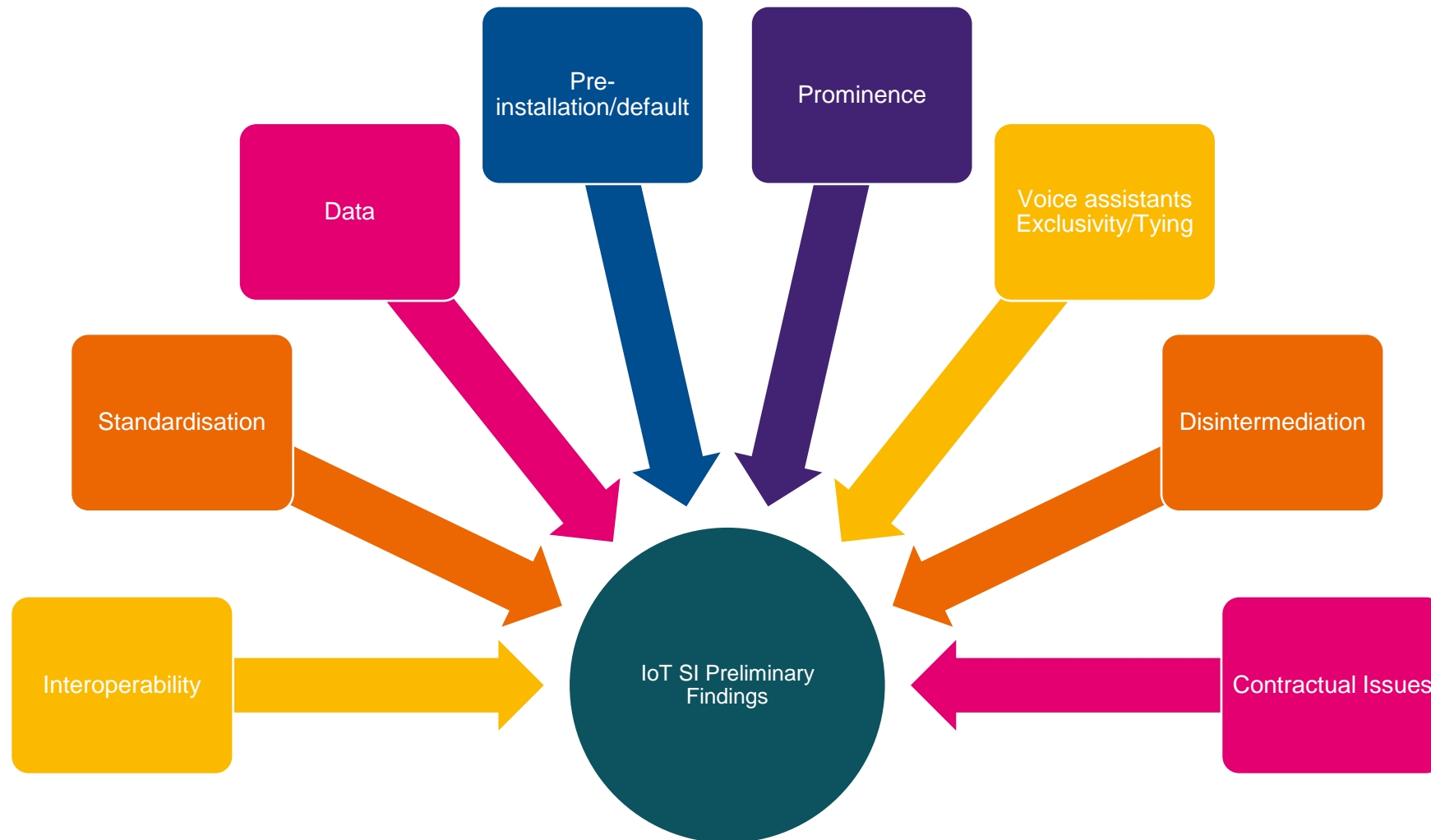
– **Services that consumers can access via a smart device, via a voice assistant or other interfaces**

- Services
  - Creative content services
  - Information and search services
  - Health and fitness services
  - Intermediation
  - Comfort and lightning
  - Security and shopping
- Enhanced by IoT

– **User interaction**

- Possibly access requirements

Interaction between IoT products and services

Voice assistants	**Voice assistants**	**Voice assistants**	**Consumer IoT services**	**Consumer IoT services**
Smart home devices	**Wearables**	**Consumer IoT services**	**Smart home devices**	**Wearables**

Voice assistants / Smart home devices
- Voice assistants becoming key gateways
- "works with" solutions
- Generally only 1 "general purpose voice assistant"

Voice assistants / Wearables
- 2/3 of wearables have voice assistant available
- Only 1 "general purpose voice assistant"

Voice assistants / Consumer IoT services
- Voice assistants particularly important for some services
- Built in integration with voice assistants
- "Skills", "actions", "shortcuts", "capsules"

Consumer IoT services / Smart home devices
- IoT services availability depends on device
  - Smart home appliances
  - Security devices
  - Smart speakers / TVs

Consumer IoT services / Wearables
- 3/4 of manufacturers of wearables also offer IoT services
- Apps:
  - Fitness
  - Navigation
  - Sleep
  - Etc.

IoT SI Preliminary Findings

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Interoperability

Preliminary Findings	Key Issues

Preliminary Findings

– Obstacles concerning access and integration of products on IoT technology platforms
  - Certification governed by platform providers
  - Diversity of tech requirements for integration
  - Divergent user experience across platforms
– Limited functionalities on consumer IoT platforms for third-party products and services

Key Issues

Potential concerns identified in this space…

– Specific customization of products and services needed, non-negotiable T&Cs

– Need to customize with every platform, technological fragmentation, expense

– Prevents consistent user experience

– Leading providers vertically integrated

– Fewer capabilities and functionality permitted on third-party smart devices

– Risk of dis-incentivising third-party smart device innovation

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Standardisation

Preliminary Findings

– High number of standards bodies and competing standards

– Cost of standardization – leadership of large tech companies in standardization

– Differences between rules for membership and participation

– Lack of transparency regarding relevant SEPs

– Diverging views on FRAND

– Growing proprietary ecosystem vs. standardization

Key Issues

Potential concerns identified in this space…

– Barrier to broader use base and limits technologies

– Lack of transparency for hardware manufacturers, software developers, esp. SMEs and new entrants

– Lack of clarity for open-source/royalty free IPR

– Need to consolidate standards, highly complex

– Membership fees high/prohibitive

– Difference in membership/transparency will limit full potential of IoT standardization

– FRAND issues/litigation risk chilling effect on future standardization

– Importance of further standardization in IoT

– Broader effects, not just affecting IoT sector

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Data

Preliminary Findings

– Connectivity and communication are key characteristics of the consumer IoT
  • collection and flow of large amounts of data
– IoT data flows typically very functional nature
– Some consumer IoT have superior access to data
  • Smart devices OS provider, voice assistants
  • Voice assistant provider can impose standard terms and conditions
– Digital advertising and consumer profiling as indirect data monetisation possibilities
  • Advantage of existing digital advertising business

Key Issues

– Accumulation of data by voice assistants
  • Full access to user's queries/commands
  • Detailed knowledge on IoT services used, use of devices
  • Access to data across multiple IoT services, to use and improve own service
  • Broad rights of data collection
– Data monetization, collecting, advertising
– Raising barriers to entry, subsidizing IoT products and services, expanding
– Leverage into third markets

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Pre-installation/Default/Prominence

Preliminary Findings

- 'Out-of-the box' features
  - Pre-installation and default settings for voice assistants
  - Pre-installation and default-setting of consumer IoT services
- Prominence of certain consumer IoT services and voice assistants
  - Parity settings
  - Display of features
  - Hardware features

Key Issues

- First party and default voice assistants
- Pre-installed / pre-downloaded apps voice assistants and IoT service applications
  - 'stickiness' competitive advantage
  - Possibility to reach new audiences
- User interface (voice assistants, apps) set defaults and direct traffic to own services
  - Inconveniences to access third party IoT service
- Prominence arrangements determine visibility and findability of a service
  - Monetary payments, revenue-sharing

Voice Assistants – Exclusivity/Tying/Concurrency

Preliminary Findings

- Most smart devices have a single built-in voice assistant (both integrated and third-party devices)
- Mostly not possible to switch between voice assistants on same device
- Additionally smart device manufacturers raise concerns about voice assistants bundling different types of software, tech and apps including voice assistants

Key Issues

Potential control concerns identified in this space…

Exclusivity and concurrency

- Difficulty due to single in-built voice assistant and where dual support is possible, blocking for concurrency of more than one

- Some manufacturers have had to make multiple lines of same IoT product as a result for different assistants

- Attempts to secure exclusivity of voice assistant presence could raise issues, if block other assistants

Tying

- Concerns raised about voice assistant bundling tech

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Disintermediation

Preliminary Findings

– Majority of respondents offer consumer IoT services and enable control of smart devices though third - party voice assistants

– Some respondents depend largely on leading providers of voice assistant and smart device OSs

– Issues include controlling:

  • The user relationship and user experience

  • Access to consumer IoT services and related data

  • Technical performance and related processes

Key Issues

Potential control concerns identified in this space…

User relations and experience

– Loss of brand recognition/end user relationship

– Set up and on-boarding issues

– Loss of control of on-boarding user experience

Access to IoT services

– Visibility of IoT services depend on discoverability rules

– Lack of data gathering due to intermediation

Technical performance

– Dependency on voice and smart device OS support

– Issues with responsiveness and updates, app removal and blocking

What's Next

Public Consultation

- Public consultation for interested parties to:
  - Comment/ submit additional information, and/or
  - Raise further issues
- Information collected in IoT SI will eventually provide guidance to the EC's future enforcement activity
- It may also feed into EC's regulatory work
- Will be considered carefully for the proposed Digital Markets Act, the EP's rapporteur for the bill confirmed

Potential Developments and Dates

- '*Could lead to new competition cases being opened*' …
- AT investigations (not necessarily waiting until after the IoT Final Report)
- Dawn raids
- Infringement decisions and fines
- Commitments

- Consultation DL **1 September 2021**
- Final report Q1 or Q2/22

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Closing Remarks

Thanks and Q&A…

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