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Competition in Virtual Worlds



- 1. Ecosystem as key concept**
- 2. Are Virtual Worlds Ecosystems?**
- 3. Ecosystems-based theory of harm by Competition Agencies (CA)**
- 4. Intricacies of parallel application of regulation (DMA and Data Act)**



1. Ecosystem as key concept

“a primary core product and several secondary (digital) products whose consumption is connected to the core product, e.g. by technological links or interoperability” [EC Relevant Market GL]

Ecosystem leadership and “Glue” [Lianos]

Alignment of business strategies by complementary/related products/services [Falce]

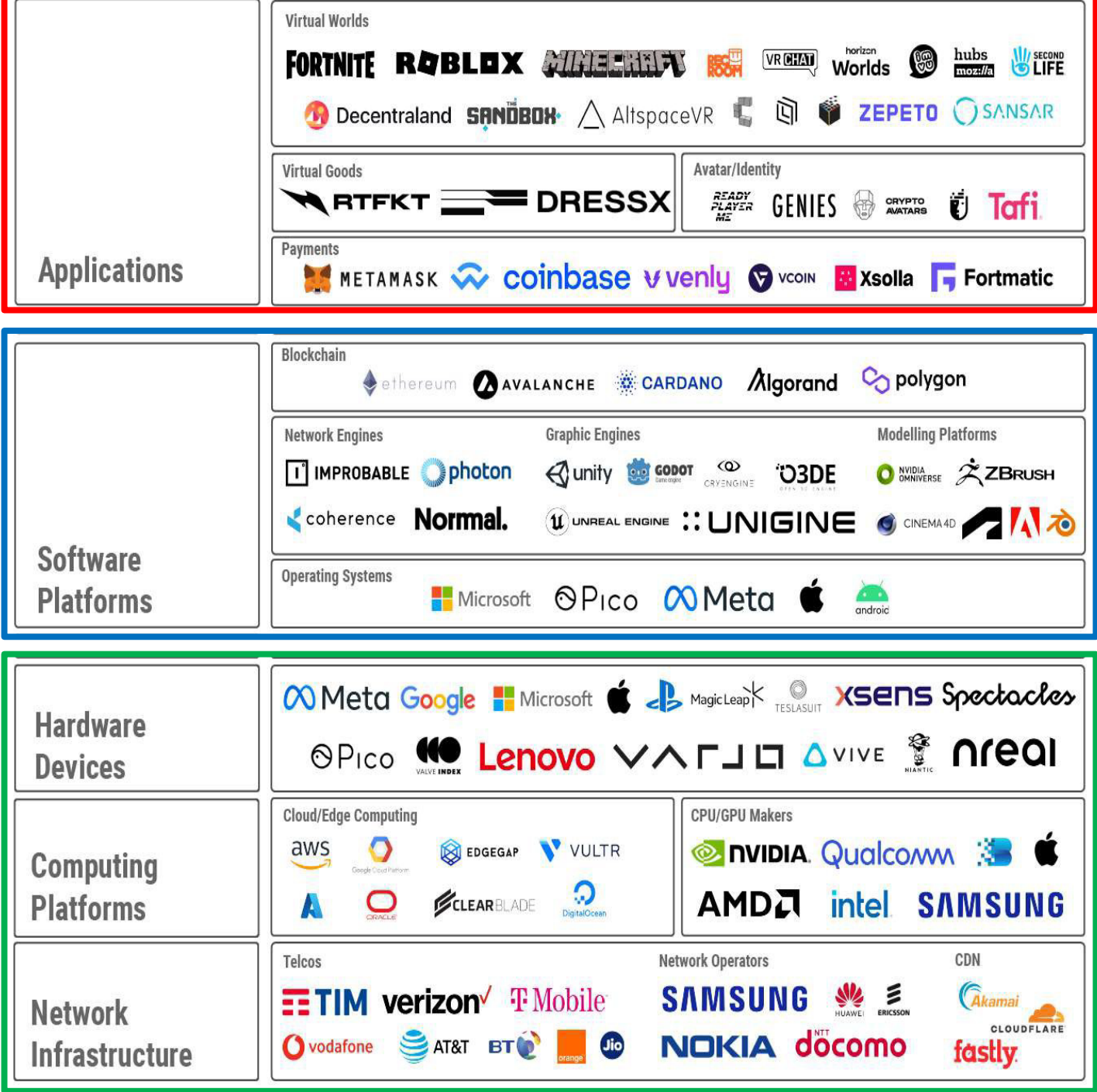
Virtual Worlds' Value Chain

User experience apps

Software Platforms

Hardware, protocol and network

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2. Are Virtual Worlds Ecosystems?



It depends on definition

3-phased approach

[Di Porto, Foà & Ennis, 2024]:

- I. **Birth:** likely ecosystems
- II. **Infancy:** not clear, as interoperability can lessen glue effects → case-by-case assessment
- III. **Maturity:** too soon to tell

Fig. 1: Virtual worlds at Birth (current) stage



Fig. 2: Virtual worlds (metaverse) at Infancy stage – EC's Communication and literature review

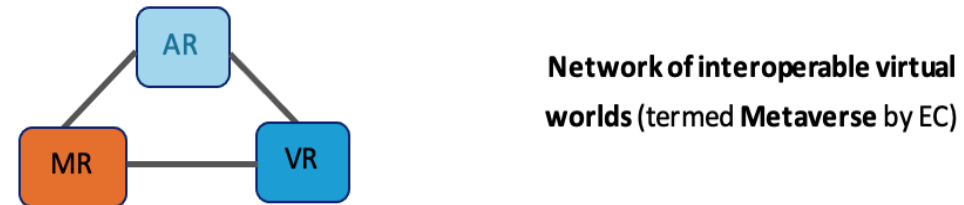
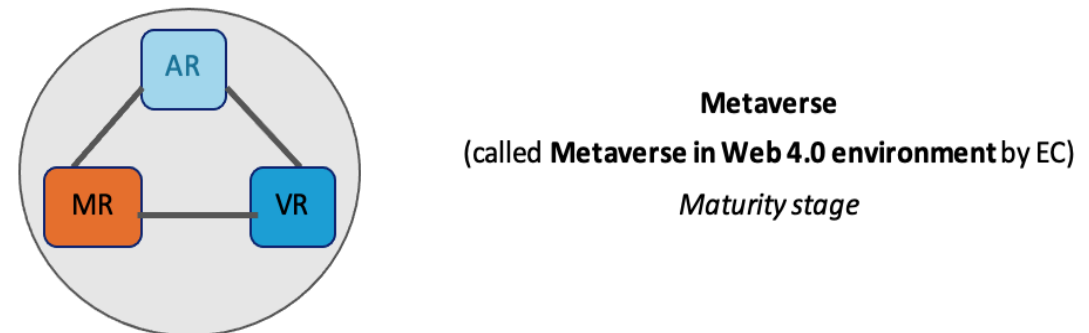


Fig. 3 – Metaverse in Web 4.0 (EC Communication and literature)





3. Ecosystems-based competition harm and its assessment (1/2)

- Theories of harm must be ecosystem-based (OECD 2023)
- Market definition:
 - Use of “digital ecosystems” and “multi-sided platforms” concepts to assess degree of interconnection/technological links [EC Communic. relevant markets]
 - After-markets: If digital products are offered as a bundle, bundle can be a relevant market on its own.
 - Gen.C. Google Android: products/services in one ecosystem may overlap/connect due to **complementarity** (vertical and horizontal)



3. Ecosystems-based theory of harm by Competition Agencies (CAs) (2/2)

Trend: synergy bet smallest markets as relevant + digital ecosystems

→ allows early intervention in new emerging markets

After-markets Th.: assess interconnections and complementarities (e.g. data interoperability; network effects; access to real-time data) to intercept power and foreclosure risks

Risk new ecosystems through proprietary standards. Check if different services/products in VW chain supplied in an integrated fashion



3.1 Unilateral practices

Exclusionary conduct to focus on:

- self-preferencing (Amazon Buy Box)
- Tying (Microsoft Teams I and II, *pending*; Meta/Quest)

Exploitative conduct

- Data abuse; dark patterns



3.2 Agreements & Interoperability standards

Data Sharing agreements

- Block exemption regulation + Horizontal cooperation Guidelines 2023
- Early stage agreements (Birth) with no exploitation are outside 101(1)

Standardization

- Collaboration is needed at Infant stage to develop VWs
- Check If leader of ecosystem sets or controls standards: potential for abuses



4. Intricacies of parallel application of regulation (DMA and Data Act)

Data Sharing mandated by regulation

- Horizontal cooperation Guidelines 2023 **unclear (only cover data sharing “encouraged” by law, not “mandated”)**
 - Mitigating measures still possible: clean teams or trustees

Data Act intricacies

- The EC may mandate SSOs to adopt interoperability standards for cloud and edge computing services, but limited to “the same service type” (e.g. 2 providers of cloud services for gaming)
 - may affect inter-VW interoperability (if VW operate in different areas)

DMA intricacies

- Standard antitrust assessment of data sharing agreements: Gains (efficiency, development of new techs, etc.) must outweigh restriction of competition
- Does not hold for GATEKEEPERS: DMA disfavors data exchange
 - VWs highly dependent on data from different techs: clarity is needed



Thank you!

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