AUGMENTED REALITY IN PUBLIC SPACES

IN BRIEF

- Augmented reality (AR) technologies are constantly being refined, but there is currently no widespread application in public spaces.
- The merging of digital and physical public spaces may carry social risks, but also offers political opportunities for shaping this development.
- Four scenarios show possible AR futures: from participatory urban design to innovative proliferation in the creative industry to individual surveillance by tech companies to controlling public opinion, e.g. by states.

WHAT IS IT ABOUT?

Augmented reality is the projection of digital information into physical space via glasses or displays. Applications include navigation, the projection of assembly instructions in industry, but also the visualisation of construction projects, educational and entertainment content or products in marketing. With the exception of industry and initial pilot projects in nursing, where, for example, data from patient records is made available with glasses during care, today's AR applications are mostly smartphone- or tablet-based. This makes permanent use in public spaces difficult, to say the least. For almost any place in the world, countless pieces of information can, in principal, be retrieved. Acceptance of new AR devices could depend heavily on the extent to which their use offers real added value. Whether the development of a groundbreaking application in the near future could make AR the centre of attention is uncertain and difficult to assess. We therefore describe possible scenarios how AR could be used in public spaces, highlighting interactions and dependencies between technology, politics, and society. Whether these scenarios could become reality also depends largely on technical improvements made to end devices, for example better displays, more computing power or more precise positioning and tracking, but also through miniaturisation, longer service life or better aesthetics.

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Digital and physical spaces are continuously merging. Their active design is becoming more important.

In addition, improving the supporting digital infrastructure also plays an important role, such as local networking technologies like 5G and edge computing, or AI for object, face, and motion recognition. National or international (media) regulation, for example at EU level, can also influence the scope for design, for example where the protection of public spaces as a public good, privacy and data protection or the taxation or breaking up of monopolies are concerned.

Of course there are fundamental questions about the authorship of content: Who produces the content that is used with AR devices, who owns it, and who benefits from it? The users themselves? Media companies that market content? Companies that advertise? State actors with management and control interests?

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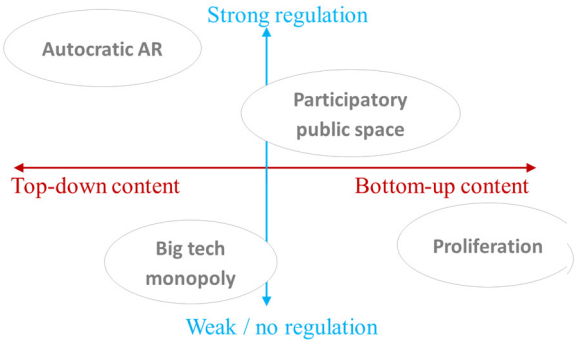
FOUR AR SCENARIOS

Participatory public space: Strict EU-wide (media) regulation protects public space as a public good. The use of AR is predominantly limited to curated information from accredited institutions. Public space will flourish, thereby greatly increasing its social benefit.

Self-curated proliferation: Large technology monopolies have been very heavily taxed or broken up, leading to the development of a highly diverse innovation landscape with small and medium-sized enterprises in the digital economy. The creative, music, and event industries have established themselves as pioneers for new AR applications. Individualisation and a great need for personalised environments are widespread.



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Four scenarios describe possible futures with AR. They differ according to the type of content and regulation.

Big tech monopoly: The public (digital) space is largely unregulated in terms of media and their content, production, and exploitation. Powerful AR terminals are widely available through technology giants. Public space is fully digitised, leading to a very high density of information about any location, accessible at any time. Content is heavily driven by advertising and consumption.

Autocratic AR: State participation in large technology corporations or the legal obligation to constantly pass on all collected data guarantees the state a very high density of data points on individuals. This availability of such large amounts of personal data as well as their efficient evaluation, whilst simultaneously dismantling democratic supervisory authorities or watchdogs, makes the system susceptible to (political) abuse and manipulation of opinion or behaviour.

WHAT TO DO?

Physical and digital public spaces are increasingly merging. The use of AR with the help of glasses, contact lenses or smartphones is expected to increase. This development should be shaped politically and socially.

- The **regulation of digital public space** should be oriented primarily towards public interest. New AR services and content that use public space could be reviewed to determine if and how they promote public interest. Clear guidelines need to be developed for this.
- Providers with a **monopoly position** who control not only the technology but also the content or its visibility could exert a strong influence on the free formation of opinion. Increased political attention is essential to counteract tendencies that are detrimental to democracy.
- **Advertising in the digital public space** should follow clear rules: Who is allowed to make what content available where? At the moment, there is a lot of room for experimentation. This opens up new possibilities, but could also quickly lead to overloading of the used space. Road safety risks, visual interference with important information or overconsumption could ensue.
- **Initiatives for the participatory design of public space** using AR, e.g. to visualise potential changes or a redesign, could be promoted. Such co-creation opportunities would counterbalance the commercialisation of public space.

FURTHER READING

Kaufmann, K. et al. (2021). Ethical challenges of researching emergent socio-material-technological phenomena: insights from an interdisciplinary mixed-methods project using mobile eye-tracking. Journal of Information, Communication and Ethics in Society, Vol. 19, 391-408. *doi.org/10.1108/JICES-01-2021-0007*

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