



RISK INNOVATION
NEXUS

UNINTENDED CONSEQUENCES OF EMERGING TECHNOLOGY



The risk domain of unintended consequences of emerging technologies specifically addresses the often-unanticipated impacts of new technological capabilities. These are risks that often fall within conventional risks domains like health and the environment, but are sufficiently novel that they elude established risk assessment and management approaches.

This risk domain has six dimensions where unintended consequences can lead to orphan risks if they are not considered:

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Health & Environment:

Some new technologies, and the products they are associated with, behave in sufficiently novel ways that they potentially lead to threats to human health and the environment that are either not directly obvious, or are unconventional enough to be easily overlooked.



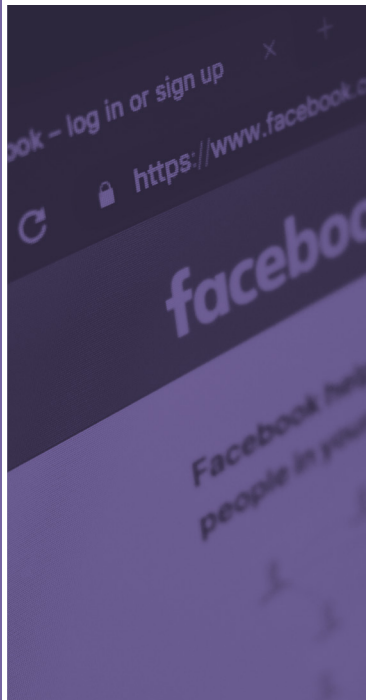
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Co-opted Tech:

Technologies and products that are used by individuals, corporations, or even governments, in ways that undermine the intention of the original business or business owner, can threaten the values and operations of an enterprise. This is especially the case where products designed to benefit people are co-opted for military purposes, or to otherwise intentionally cause harm.



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Intergenerational Impacts:

Where emerging technologies have the potential to have impacts from one generation to another, special care is needed to ensure possible risks have been identified and addressed. This is particularly the case with germline gene editing in organisms (including humans), or the use of materials that potentially lead to heritable genetic alterations, including epigenetic alterations.



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Product Lifecycle:

With a growing emphasis on sustainability and the circular economy, it's never been more important to understand the potential unintended impacts of a product, from where the basic materials are sourced from (and how they are sourced), through manufacturing and use, to its eventual disposal and reuse. Product lifecycle incorporates material risks that may adversely impact a business if not strategically addressed; but it is also connected with a number of social risks.



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Black Swan Events:

Black swan events are very low probability but high impact events that, if not prepared for, can create substantial hurdles for businesses. Some black swan events are unpredictable and/or unmanageable. Others though can be anticipated or prepared for, either by making contingency plans, or by developing resilient business practices.



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Loss of Agency:

Technologies, products, or business practices that reduce the ability of organizations and individuals to make decisions potentially raise novel risks, as they lead to a lack of accountability and traceability in consequences arising from decision-making. This is particularly relevant to the use of algorithms based on technologies such as machine learning, where there is a lack of understanding around how and why decisions are made.

