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UN High-Level Meeting on Antimicrobial Resistance: A Turning Point in Global Health Governance

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Abstract

In September 2024, the Second UN High-Level Meeting on Antimicrobial Resistance (AMR) marked a critical juncture in global health governance. This report examines the key commitments and implementation challenges emerging from the meeting's Political Declaration. While the declaration sets ambitious targets—such as reducing AMR-related deaths by 10 percent by 2030 and establishing US\$100 million in sustainable funding—massive gaps remain.

These include inadequate funding mechanisms, the absence of specific targets in crucial sectors like agriculture, and implementation challenges in low- and middle-income countries. The analysis underscores the need for robust surveillance systems, innovative financing mechanisms, and a comprehensive One Health approach that integrates human, animal, and environmental health. These findings enhance the understanding of global AMR governance and highlight priority areas for action.

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Introduction

Anti-microbial resistance (AMR) has emerged as one of the most pressing global health challenges of the 21st century. The ability of microorganisms, like tuberculosis bacteria, to evolve and resist the effects of antimicrobial drugs threatens to undermine decades of progress in modern medicine.¹ The World Health Organization (WHO) has declared AMR as one of the top ten global public health threats to humanity.²

Global health governance has evolved remarkably in recent decades, with WHO playing a central role in coordinating international health efforts. However, the complexity and cross-sectoral

nature of AMR necessitate a more comprehensive approach. The United Nations (UN) has taken on a pivotal role in shaping global health priorities, as seen in its Comprehensive Response to COVID-19³ and the Joint United Nations Programme on HIV/AIDS.⁴

The Second UN High-Level Meeting (HLM) on AMR, held in September 2024 during the UN General Assembly high-level week, marked a crucial moment in the global fight against AMR.⁵ The event highlighted the urgent need for coordinated international action to combat the rising threat of drug-resistant infections. Co-facilitated by Malta and Barbados, the meeting was a forum for global leaders to endorse a new political declaration outlining ambitious targets and commitments.

The build-up to the HLM had been marked by milestones. In 2015, the World Health Assembly adopted the Global Action Plan on AMR, setting the stage for international collaboration. The following year, the UN General Assembly held its first HLM on AMR, culminating in a political declaration. In 2017, the Interagency Coordination Group on Antimicrobial Resistance was established to drive coordinated global efforts. By 2019, WHO launched the AWaRe (Access, Watch, Reserve) classification of antibiotics to improve their responsible use. In 2021, G7 health ministers reinforced the global commitment to tackling AMR by incorporating it into pandemic preparedness plans.

Regional efforts have also been vital. The European Union's (EU) One Health Action Plan against AMR, the African Union's (AU) Framework for AMR Control, and ASEAN's Strategic

Framework to Combat AMR have all contributed to the global momentum leading up to the 2024 HLM.

The Second HLM on AMR held this year emphasised not only the technical and scientific challenges of AMR but also the need for systemic, equitable, and sustainable interventions to arrest an impending public health disaster. Discourses around AMR have often stressed the responsibility of low- and middle-income countries (LMICs) to improve medication adherence and reduce antibiotic overuse to preserve their effectiveness. While excessive access to antibiotics is a driver of AMR, insufficient access to appropriate antibiotics and other drugs leads to the spread of infections and resistance due to natural selection. In many cases, medical professionals are forced to overprescribe antibiotics in the absence of more suitable alternatives. Unequal access to medication is, therefore, central to the AMR crisis. As the world grapples with the aftermath of the COVID-19 pandemic, the need for equitable distribution of high-quality interventions remains a key concern for policymakers.⁶

The Global AMR Challenge

AMR, often called the ‘silent pandemic’, threatens to reverse decades of progress in modern medicine, potentially returning the world to an era where common infections were life-threatening. The scale of the AMR threat is staggering. According to WHO, AMR causes 1.5 million deaths annually.⁷ Even more alarming are projections that between 2025 and 2050, 39.1 million deaths will be directly attributed to AMR.⁸

The impact of AMR extends far beyond public health and poses a severe threat to global economic stability. According to the World Bank, AMR could reduce global Gross Domestic Product

(GDP) by 1.1-3.8 percent by 2050 due to both direct costs (e.g. medication and hospitalisation) and indirect costs (e.g. labour losses from worker deaths and supply shortages of livestock) of AMR. For context, the 2008 financial crisis caused a global GDP contraction of about 0.1 percent, while LMICs maintained growth during its peak.⁹ In contrast, LMICs are expected to bear the brunt of AMR-induced economic impacts, with GDP losses potentially reaching 5 percent in some regions.¹⁰ Unlike the cyclical recovery that followed the 2008 financial crisis, AMR-induced economic downturns are unlikely to see rapid rebounds. The cumulative global economic cost between 2022 and 2050 is projected to reach a staggering US\$23.4-99.2 trillion.¹¹

The threat posed by AMR is a pressing global challenge. In India, high antibiotic resistance rates contribute to an estimated 58,000 annual newborn deaths from sepsis caused by resistant pathogens.¹² In Africa, the situation is similarly severe; a study in Tanzania found that 39 percent of patients in a rural hospital were infected with antibiotic resistant-bacteria.¹³ Limited diagnostic facilities and inadequate healthcare infrastructure in many African countries compound the AMR crisis, leading to empirical antibiotic use and further accelerating resistance.

AMR's impact extends beyond infectious diseases, undermining advancements in surgery and cancer treatment. In the United States (US), antibiotic-resistant pathogens cause 1 in 7 catheter- and surgery-related healthcare-associated infections.¹⁴ This complicates post-surgical care, raises mortality rates, and drives up healthcare costs.

The multifaceted nature of the AMR threat necessitates a comprehensive, multisectoral approach. It transcends health, intersecting with agriculture, environmental management, and economic policy. The recent HLM aimed to catalyse this coordinated global response, recognising that only through collaboration can this looming crisis be mitigated.

Key Commitments and Targets

The Political Declaration from the HLM outlines key commitments, reflecting a global consensus on the urgency of addressing AMR.¹⁵ These commitments span various sectors, aiming to create a comprehensive framework for action.

Overall Target

Central to the declaration is a critical target: a 10-percent reduction in global deaths from bacterial antimicrobial resistance by 2030, compared to the 2019 baseline of 4.95 million deaths annually.¹⁶ This goal aligns with the Muscat Ministerial Manifesto's commitments and recommendations¹⁷ and recent publications in *The Lancet*.¹⁸

Establishing this measurable target marks notable progress in global AMR efforts, offering a clear benchmark to track progress and ensuring accountability in combating AMR.

Governance and Financing

The political declaration urges all countries to develop, update, or implement multisectoral national action plans (NAPs) on AMR by 2030, emphasising the need for country-specific strategies that address local challenges while contributing to global efforts. However, NAP implementation remains uneven globally. Countries like Sweden and the Netherlands have made progress, but many LMICs face resource constraints.¹⁹ Ghana, for instance, launched its NAP in 2017 but has struggled with limited funding and competing health priorities.²⁰

In contrast, some countries had integrated AMR into their national discourse well before the First HLM. In Thailand, for instance, AMR was a community-level concern for years before being elevated to national policy. The Thai government adopted a decentralised approach, funding a health assembly involving representatives from academia, government, and provinces. This process allowed local proposals to inform national policy, fostering coordination and local buy-in.²¹

The declaration also sets a target of US\$100 million to support the implementation of funded plans in at least 60 percent of countries by 2030.²² While this financial commitment is a positive step, many experts argue that it is insufficient to effectively combat AMR on a global scale.

The inadequacy of this funding is evident: while 170 countries have formulated NAPs, only around 10 percent are bolstered by sufficient budget allocations.²³ In Africa, the AU has estimated a need for US\$2-6 billion annually to tackle the problem effectively.²⁴ This disparity between the

proposed funding and actual needs highlights a massive challenge in the global fight against AMR. For context, the Global Fund to Fight AIDS, Tuberculosis, and Malaria raised US\$14.25 billion in its 2022 replenishment cycle, underscoring the scale of the funding shortfall for AMR.²⁵

A key intervention proposed is the creation of an independent panel on AMR by 2025, designed to provide evidence-based guidance similar to the Intergovernmental Panel on Climate Change (IPCC). Establishing such a panel could enhance global coordination and ensure that policies are based on the latest scientific evidence.

However, concerns have been voiced about the independence of the proposed panel, particularly the risk of vested interests—such as the food and pharmaceutical industries—diluting its effectiveness.²⁶ To address these concerns, groups like Médecins Sans Frontières have emphasised that the independent panel must serve the communities most affected by AMR, ensuring that its recommendations prioritise public health over commercial interests.²⁷

Access

The declaration emphasised the urgency of improving access to essential antimicrobials, diagnostics, and vaccines, particularly in LMICs, which are disproportionately affected by AMR yet lack the necessary resources for effective prevention and treatment. Although it stops short of specifying measurable targets for access improvement, the declaration advocates for accelerating progress toward universal health coverage and ensuring equitable, timely access in developing countries.

This focus on access is crucial, given the overreliance on antibiotics in many LMICs.²⁸ WHO's 13th General Programme of Work (2019-2023) set a target for countries to derive 60 percent of their antibiotic consumption from the "Access" group, intended for treating everyday infections.²⁹ However, in many countries, the majority of antibiotics are from the last-resort "Reserve" group, highlighting the need for improved access to appropriate antimicrobials.

The challenge of balancing access and excess is particularly acute in LMICs. In many African countries, for example, access to quality-assured antibiotics remains limited, with studies showing that only 61 percent of essential antibiotics are available in public health facilities, and nearly

one-fifth of these have quality issues.³⁰ Meanwhile, in countries like Vietnam, the over-the-counter availability of antibiotics—often due to a lack of suitable alternatives—drives overuse and accelerates resistance development.

Global partnerships like the Antimicrobial Resistance Multi-Partner Trust Fund (MPTF) support countries in implementing their NAPs, but more focused efforts are needed to ensure equitable access while preventing misuse. Regions where the same professionals both prescribe and dispense antibiotics are particularly vulnerable to overprescription. Countries like South Korea and Taiwan have prohibited this practice and experienced promising improvements in prescription quality.³¹ Incorporating such tested policies into other NAPs could accelerate the fight against AMR.

Coordinated Multisectoral Response

The complexity of AMR stems from its cross-sectoral nature. It is not only a human health issue but also encompasses animal health, agriculture, and environmental factors. The declaration recognised this complexity and identified several key themes as part of a concerted One Health approach:

- **Human Health**

In the realm of human health, the declaration called for at least 70 percent of global human antibiotic use to come from the WHO Access group by 2030.³² While this target is less ambitious than the 80 percent recommended by the *Global Leaders Group (GLG)*,³³ it surpasses the 60 percent target of the Muscat Ministerial Manifesto³⁴ and previous WHO goals.³⁵ Countries like the Netherlands have already achieved high rates of appropriate antibiotic use through strict stewardship programmes and public awareness campaigns.

The declaration also emphasises the need to establish minimum requirements for national infection prevention and control programmes in healthcare facilities. This is critical, as studies have highlighted that sanitation, hygiene, and infection prevention have often been neglected in global AMR commitments.³⁶ The impact of improved sanitation and hygiene on reducing AMR-related mortality is significant. For example, a hand hygiene programme in a hospital in Vietnam reduced healthcare-associated infections by 36 percent, demonstrating the potential of simple, cost-effective interventions.³⁷ It has been discovered that universal access to water, sanitation, and hygiene infrastructure, infection control in hospitals, and childhood vaccines could prevent 750,000 deaths associated with AMR.³⁸

- **Agriculture and Animal Health**

The declaration called for a reduction in the quantity of antimicrobials in the agri-food system but stopped short of setting a specific numerical target, largely due to resistance from the food industry and certain member states. This omission is significant, as 73 percent of global antimicrobial sales are used in livestock rather than human healthcare.³⁹

The lack of a specific target in this area represents a missed opportunity. *The Lancet*, the Muscat Ministerial Manifesto, and the GLG^{40,41,42} had all called for reductions of 30 percent to 50 percent in inappropriate animal antibiotic use. The absence of such a target in the final declaration highlights the challenges in balancing public health concerns with industry interests.

India, often considered the epicentre of AMR, is the fifth largest producer of chicken and provides 20 percent of global milk production.⁴³ However, it remains one of the few countries where the use of antibiotics to promote poultry growth is still legal. Although veterinary treatment guidelines regarding antibiotics exist in India as of October

2024, their implementation is expected to be difficult, and monitoring of antibiotics in food is largely absent. India's much-anticipated AMR NAP 2.0, which will succeed the first NAP for 2017-21, could advance these areas.⁴⁴ Denmark's success in reducing antibiotic use in livestock by 49 percent between 1994 and 2015 demonstrates what can be achieved with concerted effort.^{45,46}

- **Environment**

While the declaration acknowledged the importance of stewardship programmes and the environmental management of air, water, plants, soil, food, and vectors, it lacked detailed guidance or concrete targets for mitigating these environmental risks. Experts continue to stress the importance of improving waste management systems in both the pharmaceutical and agricultural sectors.

Sewage is a major source of AMR, yet farmers in many countries still use untreated wastewater for irrigation.⁴⁷ A study in China found antibiotic residues in 58 percent of water samples near large-scale livestock farms, highlighting the environmental impact of agricultural antibiotic use.⁴⁸

While both the pharmaceutical and agriculture sectors could take preventive action to improve waste management, one-third of NAPs do

not address environmental factors.⁴⁹ This gap highlights the need for a more comprehensive approach to AMR that includes environmental considerations. Successful environmental stewardship programmes, such as Sweden's voluntary environmental classification system for pharmaceuticals, offer models for other countries.⁵⁰ However, global implementation remains a challenge, particularly in regions with weak or poorly enforced environmental regulations. In September, WHO and the United Nations Environment Programme (UNEP) published new guidelines on managing wastewater and solid waste from antibiotic manufacturing, which could support the development of stronger national policies.⁵¹

Accountability, Research and Development

One of the most important recommendations from the UN HLM was the need for robust accountability mechanisms. Experts have compared AMR efforts to other global health and climate frameworks, such as the 90-90-90 targets for HIV, suggesting that similar measurable goals could drive momentum for AMR efforts.⁵² The declaration calls for regular global meetings to assess progress, reflecting the need for more frequent, multi-sectoral engagement.

The declaration identified areas for innovation in research and development (R&D), particularly in the development of new antibiotics and diagnostic tools. However, the risk of developing new antibiotics that receive limited authorisation or quickly become resistant has led large pharmaceuticals to hesitate to invest in this field. This has resulted in an investment shortfall, driving researchers away from antibiotic development.⁵³ More than 90 percent of innovation now comes from small companies.⁵⁴ A WHO review of the 112 companies involved in antibiotic development found that over half of them had fewer than ten employees. Between 2021 and 2023, 32 developers were lost as their programmes could not be verified, underlining the fragility of the market. Between 2017 and 2023, only 13 new antibiotics were authorised, and of those, only two represented truly innovative chemical classes.⁵⁵ Even when medications are developed and authorised in regions like the US, they face challenges in uptake due to factors such as a lack of susceptibility testing and hospital reimbursement, meaning very few innovative antibiotics ever reach patients at large.⁵⁶

This shift in the landscape of antibiotic development highlights the importance of prioritising research funding for public and nonprofit initiatives to ensure a collaborative research approach. It also underscores the need for innovative financing mechanisms and incentives to

encourage antibiotic development, particularly for small companies and researchers in LMICs.⁵⁷

Surveillance and Monitoring

Effective surveillance is crucial for understanding AMR trends and guiding interventions. WHO's Global Antimicrobial Resistance Surveillance System (GLASS) has made strides, but coverage remains incomplete, particularly in LMICs.

The HLM set ambitious targets for global surveillance and monitoring of AMR. By 2030, the Political Declaration encourages all countries to report quality surveillance data on AMR and antimicrobial use. It aims for at least 80 percent of countries to have the capacity to test resistance in all bacterial and fungal GLASS pathogens. The declaration also targets 95 percent participation in the annual Tracking Antimicrobial Resistance Country Self-Assessment Survey.⁵⁸

These well-defined targets mark progress in quantifying and addressing the AMR challenge. However, the lack of robust data in many LMICs remains a hurdle in accurately assessing the scale of the problem.⁵⁹ Recent research published in *The Lancet* suggests that public-private surveillance partnerships could be crucial for gathering comprehensive data on AMR surveillance, antibiotic use, and optimising current practices.⁶⁰

Such partnerships can achieve the ambitious monitoring and evaluation goals outlined in the Political Declaration, particularly in resource-limited settings. By leveraging the resources and expertise of both public and private sectors, these collaborations could enhance our understanding of AMR patterns and trends, enabling more targeted and effective interventions.

Countries like South Korea have implemented comprehensive national surveillance systems, integrating data from human health, animal health, and environmental sectors.⁶¹ These One

Health approaches to surveillance provide a model for other countries. Innovative solutions are also being explored to bridge surveillance gaps in resource-limited settings. In Kenya, for example, a mobile phone-based surveillance system has been piloted to collect real-time data on antibiotic use and resistance patterns in remote areas.⁶²

Successful interventions combining surveillance and education have been introduced on the organisational level. Forty-seven hospitals in South Africa participated in an antimicrobial stewardship programme, setting collective goals for reducing antibiotic use. They also conducted educational workshops for staff, each followed by metric feedback on their hospital's performance. After 53 such cycles, a reduction of 18.1 percent had been achieved across the hospitals.⁶³

Critical Analysis

While the Political Declaration represents progress in global AMR governance, a number of areas warrant closer attention:

Funding Gaps: The proposed US\$100-million target for sustainable funding falls far short of estimated needs and is widely considered inadequate. More substantial and sustainable funding mechanisms are crucial for the effective implementation of NAPs, particularly in LMICs. The discrepancy between the proposed funding

and the estimated needs (such as US\$2-6 billion annually for Africa alone) highlights a challenge in translating commitments into actionable plans.⁶⁴

Innovative financial mechanisms are being tried globally to incentives where markets currently fail. In Europe, countries use market entry rewards, subscription payments, and milestone payments at different stages of antibiotic development. The United Kingdom is the first country to pay a fixed annual fee for antimicrobials, depending on their value, to the National Health Service.⁶⁵ However, for these mechanisms to benefit regions most affected by AMR, antibiotic innovation developed in high-income countries must become much more available in LMICs.

Lack of Specific Targets: The declaration lacks specific, measurable targets in key areas such as antimicrobial use in agriculture, animal health, and environmental management. For instance, despite earlier calls for 30-50 percent reductions in antibiotic use in animals, the declaration did not set a concrete numerical target. Similarly, it provides no specific guidance on environmental management. This is a missed opportunity, given that a third of NAPs do not include environmental considerations, highlighting the ongoing challenge of balancing public health concerns with industry interests.

Access vs. Excess: The declaration attempts to balance the need for increased access to effective antimicrobials in some regions with the goal of reducing excessive use in others. This delicate balance requires careful implementation and monitoring. While improving access is crucial, especially in LMICs, it must be accompanied by robust stewardship programmes to prevent misuse and overuse of antimicrobials.

Addressing the Research and Innovation Gap: The declaration recognises opportunities for innovation. For instance, developing new animal vaccination strategies could reduce antimicrobial

use in livestock, while improving diagnostics can help minimising unnecessary antibiotics reliance. Additionally, improving wastewater management in pharmaceutical production and healthcare facilities is a critical gap. Resources such as WHO's and UNEP's guidelines on managing wastewater and solid waste from antibiotic manufacturing can support countries in developing context-specific interventions.⁶⁶

Moreover, the number of pharmaceutical companies developing new antibiotics has declined since 2000, with over 90 percent of innovation now originating from small companies.⁶⁷ This decline is largely due to the reluctance of big pharmaceutical companies to invest in antibiotic development, given the poor return on investment. Developing a new antibiotic costs about US\$1.5 billion, and revenues generated are a far lower US\$46 million annually.⁶⁸ To address this challenge, there is an urgent need for more targeted incentives and support for small companies. Leveraging public-private partnerships, such as CARB-X,⁶⁹ alongside push and pull incentives, could help address market failures. Additionally, improved surveillance and data collection, especially in LMICs, is critical for guiding interventions and ensuring sustainable progress.⁷⁰

Finally, there is scope for research and innovation around novel antibiotic technologies such as protein folding and photodynamic therapy, with a number of promising R&D avenues being explored.⁷¹ Researchers are investigating new chemical classes, such as teixobactin, which could overcome existing resistance mechanisms, while alternative approaches like bacteriophage therapy and CRISPR-based antimicrobials offer potential alternatives for traditional antibiotics. Additionally, the development of point-of-care diagnostic tests capable of rapidly identifying bacterial infections and resistance profiles could help reduce unnecessary antibiotic use.

These cutting-edge approaches could potentially revolutionise the fight against drug-resistant infections and should be prioritised in research funding allocations. Funds such as the AMR Action Fund by WHO, European Investment Bank, and Wellcome Trust, attract private investments, while funds such as the Fleming Fund, supported by WHO, FAO, and the World Organization for Animal Health, specifically support LMICs in advancing their R&D endeavors. To address the magnitude of the AMR challenge, these funding mechanisms must be scaled up.

Implementation Challenges: While the declaration sets ambitious goals, the path to implementation remains unclear. Many countries, particularly LMICs, face barriers, including inadequate infrastructure, limited resources, and insufficient technical capacity to operationalise the proposed measures. Addressing these implementation challenges will require sustained international cooperation, robust capacity-building initiatives, and technical assistance.

Equity Considerations: The declaration acknowledges the disproportionate impact of AMR on LMICs, but more concrete measures are needed to ensure equitable access to resources, technologies, and innovations. This includes access to not only antimicrobials but also to diagnostics, vaccines, and other preventive measures.

Balancing public health priorities with industry interests remains a critical challenge. While pharmaceutical industries argue that high drug prices are necessary to fund innovation, this must be weighed against the imperative for affordable access, particularly in vulnerable regions. Innovative financing mechanisms, such as the UK's antibiotic subscription model,⁷² aim to address this tension by providing pharmaceutical companies with a predictable return on investment while ensuring antibiotic availability.

‘One Health’ Approach: While the declaration mentions the One Health approach, which recognises the interconnectedness of human, animal, and environmental health, there is room for stronger integration of this concept into specific actions and targets. Many NAPs currently overlook environmental or animal health. A more robust One Health framework could enhance the effectiveness of AMR interventions across sectors.

Public Awareness and Education: The declaration highlights the importance of public awareness, but greater focus is needed on comprehensive education programmes to promote responsible antimicrobial use among the public, healthcare providers, and agricultural workers. The successful stewardship programmes in South African hospitals demonstrate that AMR is a complex phenomenon that requires changes to entrenched practices. Educational interventions must be prolonged and include performance

feedback mechanisms to drive lasting behaviour change among practitioners. The global response to AMR can be learned from other public health campaigns. The success of the polio eradication initiative demonstrates the power of sustained political will and global cooperation.

Similarly, the global response to HIV/AIDS, particularly in improving access to antiretroviral therapy in LMICs, offers valuable insights for ensuring equitable access to antibiotics and responsible use. Dropout from antiretroviral therapies is as high as 50 percent in some programmes and, like premature termination of antibiotic treatment, threatens the success of HIV/AIDS interventions. Recent programmes now incorporate cognitive behavioral therapy techniques, recognising⁷³ the psychological toll of illness and side effects, which could also improve adherence to antibiotic treatment.

Conclusion

The coming years will be decisive in determining whether the world can mount an effective response to one of the most pressing health crises of the 21st century. The commitments made at the UN HLM provide a foundation, but translating these commitments to concrete actions will require sustained effort, collaboration, and innovation across sectors and borders. AMR is a complex, multifaceted challenge, and the actions taken today will determine whether future generations will continue to benefit from

one of the greatest medical breakthroughs of the 20th century—effective antimicrobial treatment. Only through a comprehensive, ‘One Health’ approach that recognises these interconnections can the tide be turned on antimicrobial resistance and the efficacy of these life-saving drugs can be safeguarded for future generations. [ORF](#)

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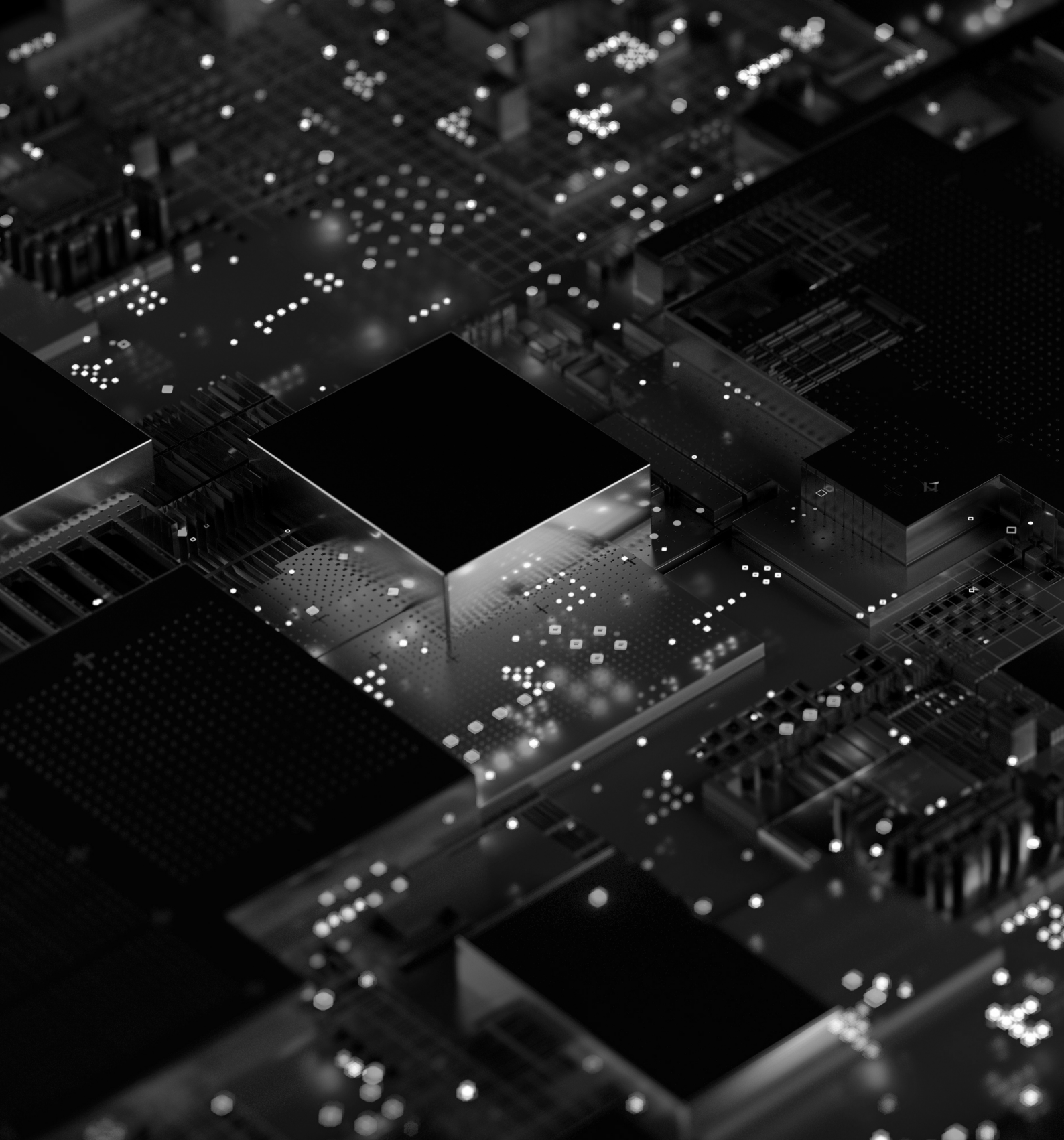
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