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Transforming Enterprise Architecture

Harnessing 5G, Embracing 6G, and Leveraging Generative AI for Cost Efficiency

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Strategic Directions

Sustainable Practices

- Green Infrastructure
- Energy Efficiency

Innovation and Efficiency

- Supply Chain Management
- Customer Service

Global Collaboration and Standardisation

- International Cooperation
- Standard Setting

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5G and 6G Technologies – Revolutionising Enterprise Architecture

Enterprise Architecture

Scalability: 5G and 6G support massive connectivity, enabling enterprises to scale operations without network congestion.

Flexibility: Network slicing and edge computing allow for tailored virtual networks and reduced latency, improving real-time data processing.

Performance: Ultra-low latency and high data rates enhance real-time responsiveness and high-bandwidth applications.

Examples

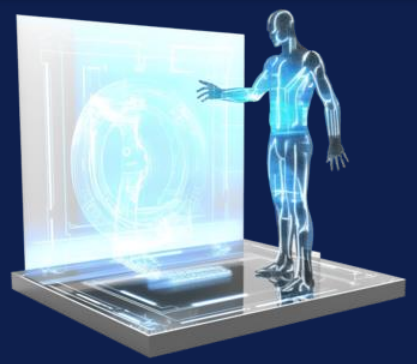
IOT

Smart Applications

Real-Time Holography

5G Capabilities

Enhanced mobile broadband, ultra-reliable low latency communication, massive machine-type communication.



6G Advancements

Terabit speeds, ultra-low latency, AI-driven networks, advanced sensing, energy harvesting, NTN, RIS

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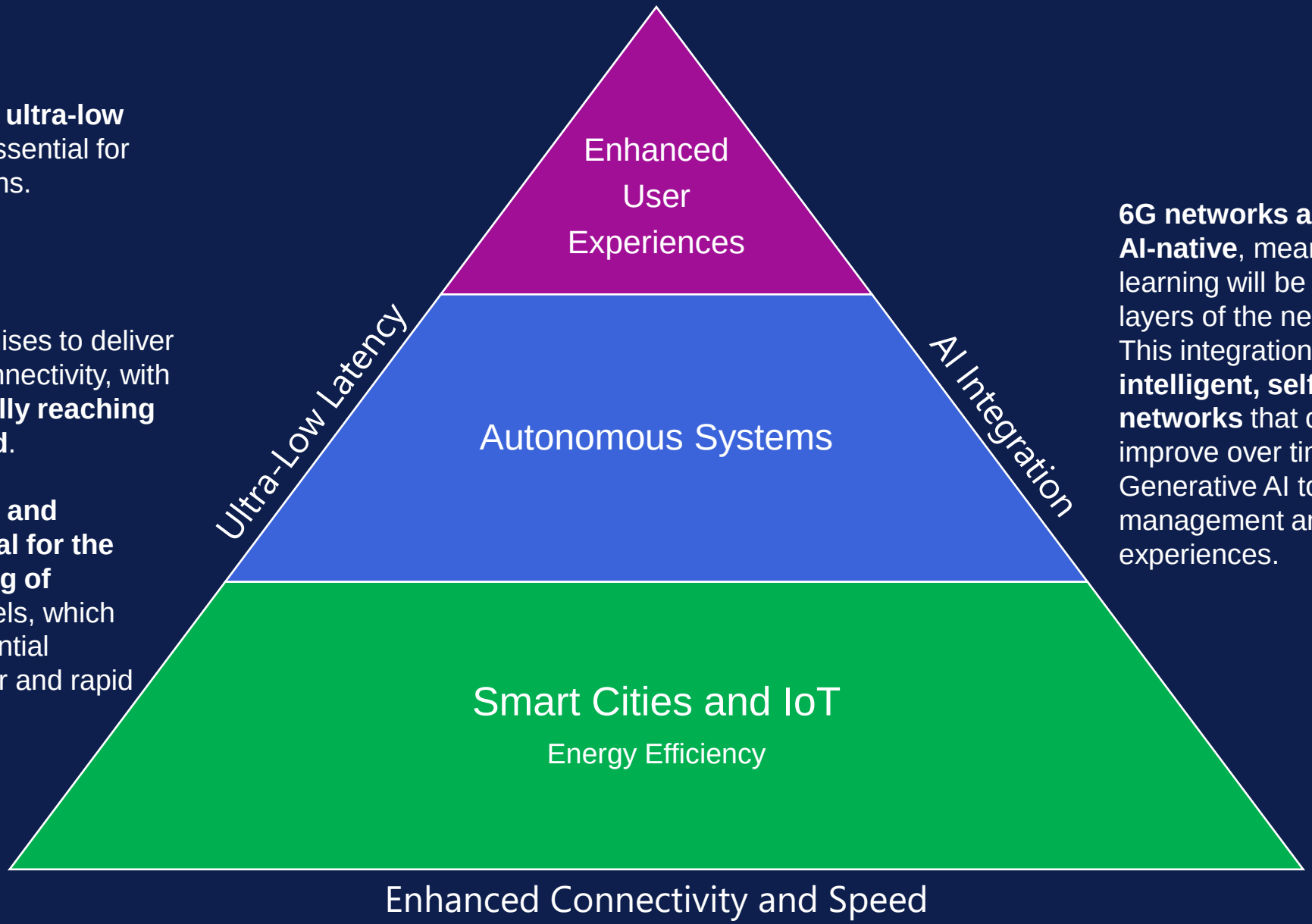
Synergy Between 6G and Generative AI – Complementary Technologies

6G aims to achieve **ultra-low latency**, which is essential for real-time applications.

6G technology promises to deliver ultra-high-speed connectivity, with **data rates potentially reaching terabits per second**.

This level of speed and bandwidth is crucial for the efficient functioning of Generative AI models, which often require substantial computational power and rapid data transfer.



6G networks are expected to be AI-native, meaning AI and machine learning will be integrated into all layers of the network.
This integration will allow for **more intelligent, self-optimising networks** that can adapt and improve over time, leveraging Generative AI to enhance network management and user experiences.

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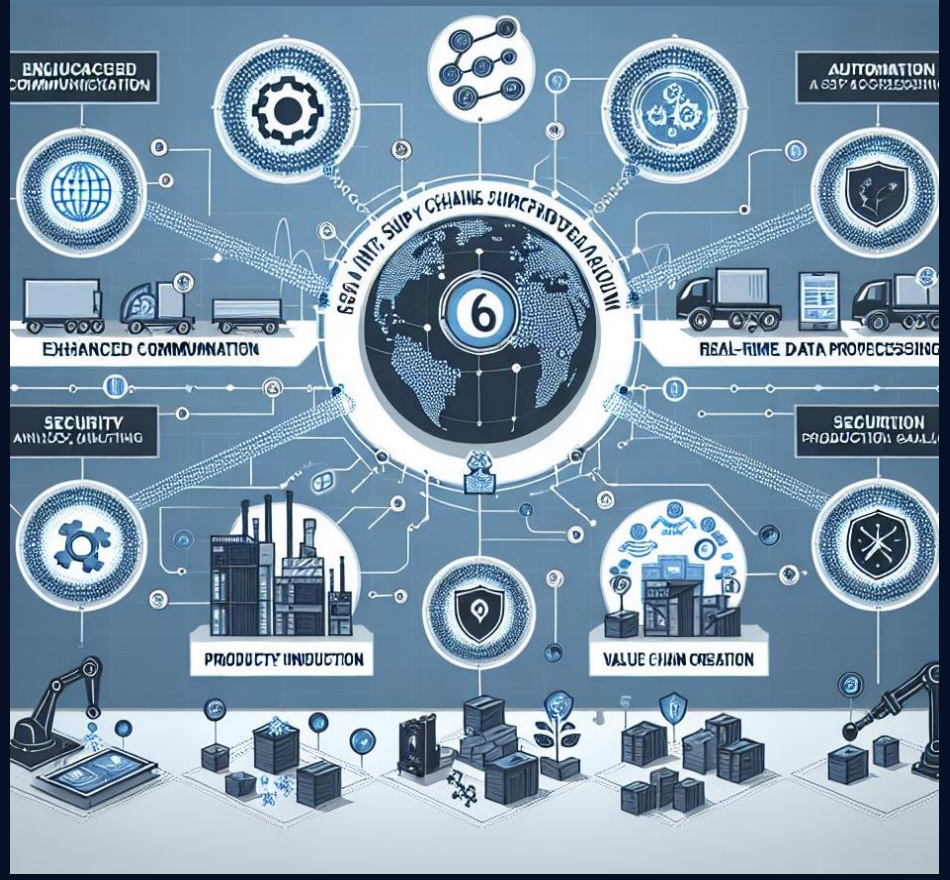
Impact on Supply Chains and Value Chain Creation



By adopting 6G …

businesses can ensure their supply chains are **future-ready, driving innovation and growth** in a rapidly evolving market

Value Chain Creation

Resilient & Agile Supply Chain

Instant Analytics

Real-time Coordinating With Value Chains

minimizing disruptions and reducing lead times

Secure Operations

Maritime & Aviation

AI-Enhanced Security

Automated Processes

Real-Time Coordination

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Reducing Operational Costs and Supporting Growth

Economic Value: Analysts predict that 6G could generate trillions of dollars in economic value globally, with significant contributions to various industries

Impacts on Operational Costs

6G technology can significantly **lower operational costs** through automation, improved efficiency, and reduced downtime.

Strategies:

- **Automation**: 6G enables advanced automation in various industries, reducing the need for manual labour and minimizing errors.

±30%

- **IoT Integration**: With 6G, IoT devices can communicate more efficiently, leading to better resource management and lower maintenance costs.

±25%

- **Energy Efficiency**: 6G networks are designed to be more energy-efficient, reducing energy costs for businesses.

±20%

Impacts on Revenue & Profit

Revenue Growth: 6G opens new opportunities for revenue generation through innovative services

Profit Utilization: Increased profits from cost savings can be reinvested into growth initiatives

Balancing Cost Reduction and Growth with 6G

- **Sustainable Practices**: Implementing 6G technology in a way that reduces costs without compromising service quality ensures sustainable growth.

±45% CER

- **Innovation and Efficiency**: Leveraging 6G for innovative solutions and operational efficiency helps balance cost reduction with growth. For instance, 6G's low latency and high reliability can improve supply chain management and customer service.

±15% CSAT

Future Trends and Preparing for 6G

Global investment in 6G infrastructure:
$1.5 trillion between 2023 and 2030

Market Growth:
$68.69 billion by 2035

Revenue Forecast:
$70.43 billion by 2032

Compound annual growth rate (CAGR):
33.9% between 2024 and 2032

Robo Advisors

Financial Services

Enhanced security, real-time transactions, and new financial products.

Patient Monitoring Bots

Healthcare

Rapid advancements in areas like telemedicine, remote surgeries, and real-time health monitoring

Telecommunication

Ultra-fast, reliable connectivity

AI Support Bots

Smart Farming Bots

Agriculture

Precision farming, real-time monitoring, and automation

Manufacturing

Enhanced automation, robotics, and the Industrial Internet of Things (IIoT)

Quality Control Bots

AI Logistics Bots

Transportation

Autonomous vehicles and smart traffic management

Ultra-Fast Data Transfer	AI-Optimized Networks	Extended Reality XR	Advanced Sensing Robots	Energy Harvesting Supercapacitors	Industry 4.0 IoT, AI/ML	Global Connectivity NTN, MEC

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