Technology Trends

ISSUES FACING RISK AND COMPLIANCE

DAVID CHILDERS

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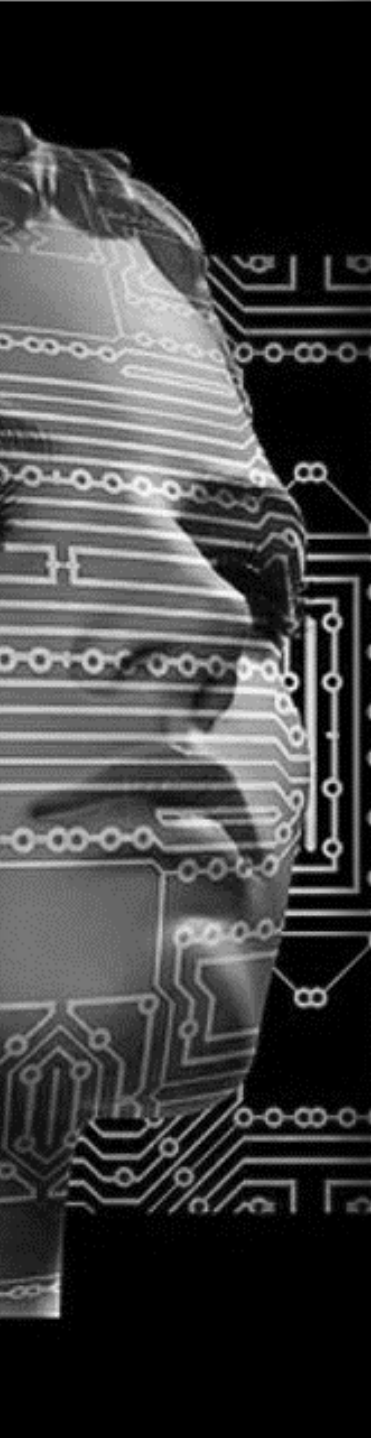


ARTIFICIAL INTELLIGENCE (AI) GLOSSARY

ANI – Artificial Narrow Intelligence

- ANI creates a “decision support system” based on pre-set parameters with the majority of decisions remaining in human hands.

AGI – Artificial General Intelligence

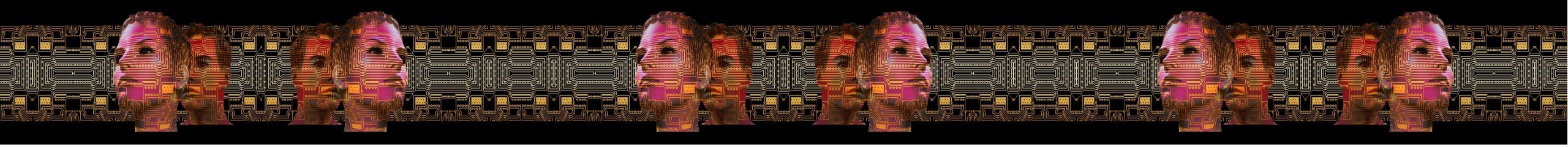
- AGI achieves complex goals in difficult environments with limited computational resources, has the ability to transfer learning and make independent decisions.

Machine Learning

- Machine Learning algorithms look for patterns in data and make or suggest better decisions for the future based on human provided examples and guidelines.

Deep Learning

- Deep Learning uses unsupervised algorithms that learn from their own analysis and without human pre-set parameters.



TECHNOLOGY RISKS:

- ✓ Rapid adoption of Machine Learning and Business AI as part of workplace automation;
- ✓ The loss of operational transparency with the expansive use of Narrow Artificial Intelligence to perform operational review functions;
- ✓ Movement to unsupervised Deep Learning and autonomous determinations in transactional models and activities; and,
- ✓ Movement to Perception AI in some HR and other “intake and evaluation” functions.

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BUSINESS AI

AI is altering decision making within organizations and improving efficiency.

These developments raise important policy, regulatory, audit and ethical issues:

- Unintentional programming or “learned” biases based on evolving logic;
- Fairness;
- Safety;
- Transparency;
- Accountability; and,
- Intentional programming.

MACHINE LEARNING & AUTONOMOUS AI

Advanced programming, telemetry sensors and rapid data comprehension create unsupervised and obscure interactions and results.

- Consider: space vehicles, assembly lines, smart buildings, energy grids, financial transactions, or self-driving vehicles.
- One self-driving car produces 4,000GB of data per day. Autonomous AI analyzes the data automatically, in real time to gain a full comprehension of the patterns, changes, concepts and contexts that are necessary for safe vehicle operation.
- Security cameras around the world capture 30 billion images a second.

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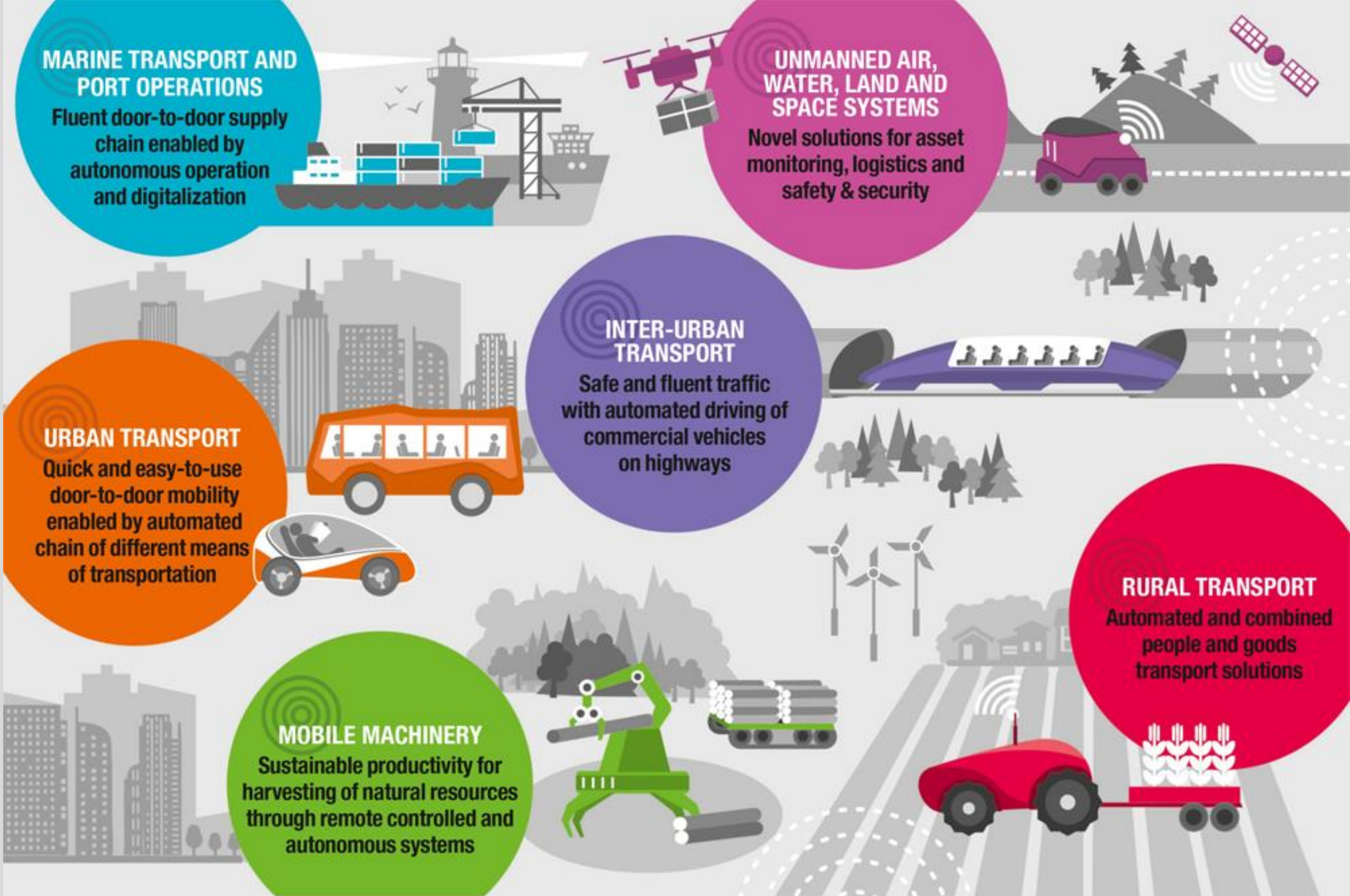
ANNONOMOUS HACK EXAMPLES



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PERCEPTION AI

Perception AI is able to interpret, reason, consider and transform sensory data.

- Online activities, personal preferences (habits), and IoT integration support Perception AI.
  - More like this, Restaurants Tips, Netflix for YOU,
- Smart home “conveniences” and targeted advertising enhance the acceptance of Perception AI.
  - Automated shopping lists for food based on usage, season, existing inventory, preferences and price.