Building a Stronger Defense with Technology

2018 SERDP ◆ ESTCP Symposium: Enhancing DOD's Mission Effectiveness

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Defense & Intelligence Agencies need essential operating capabilities to achieve…

a flexible and adaptive force

the ability to predict, prevent or respond to disrupting impacts

a strong connection to citizens and industry

Defense and Intelligence agencies face an array of challenges and technology constraints

Velocity of instability from weeks to hours

2.31 billion social media users

244 million migrants

NATO personnel levels **down 2%**

US DOD procurement budget **down 7.4% YTY**

Nuclear warfare
Terror
Cyber
Refugee flows
Climate change
Mass atrocities
Violent extremism
Fragile states

Too Much Data vs Actionable Insight

Rigid Processes vs Agile Development

Query State vs Predictive Analysis

After the Fact vs Real-time / Stream

The era of Big Data creates a challenge – but also opportunity

7 Terabytes
streamed video daily for ISR

How do I find a needle in a stack of needles?

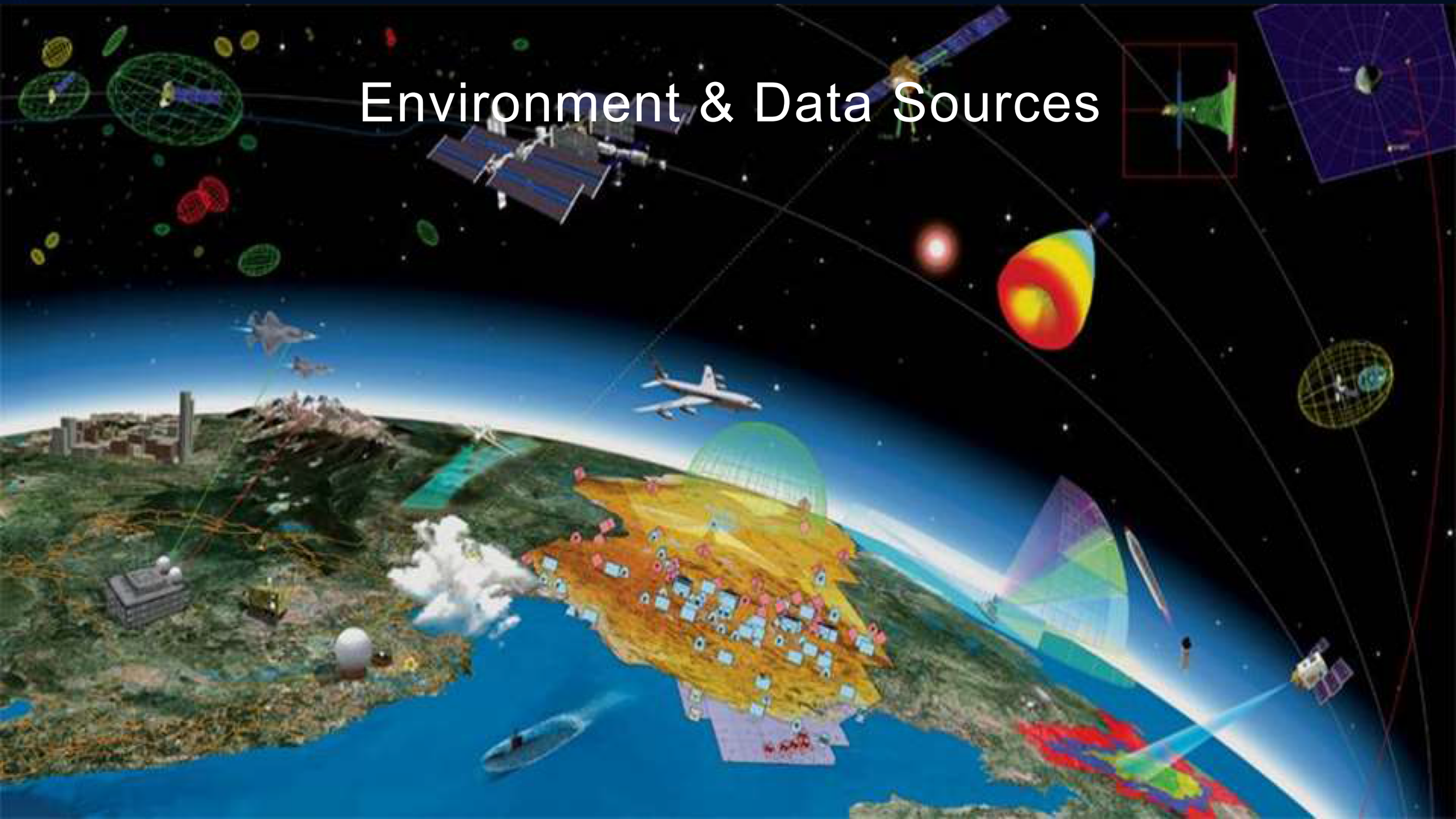
400 Zettabytes
of data generated by IoT in 2018

How do I put the pieces together for the complete picture?

1.97 Billion
users of mobile social media

How do I exploit Open Source and Social Media for prevention?

Environment & Data Sources

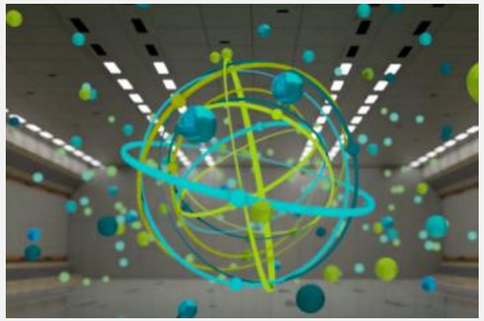


What has changed?

The explosion of data

New ways of operating

Cognitive computing



Defense and Intelligence Organizations in the Cognitive Era need agile systems and capabilities that can **enhance digital intelligence** exponentially – shortening the lifecycle from collection, to analysis and situational understanding

UNDERSTAND

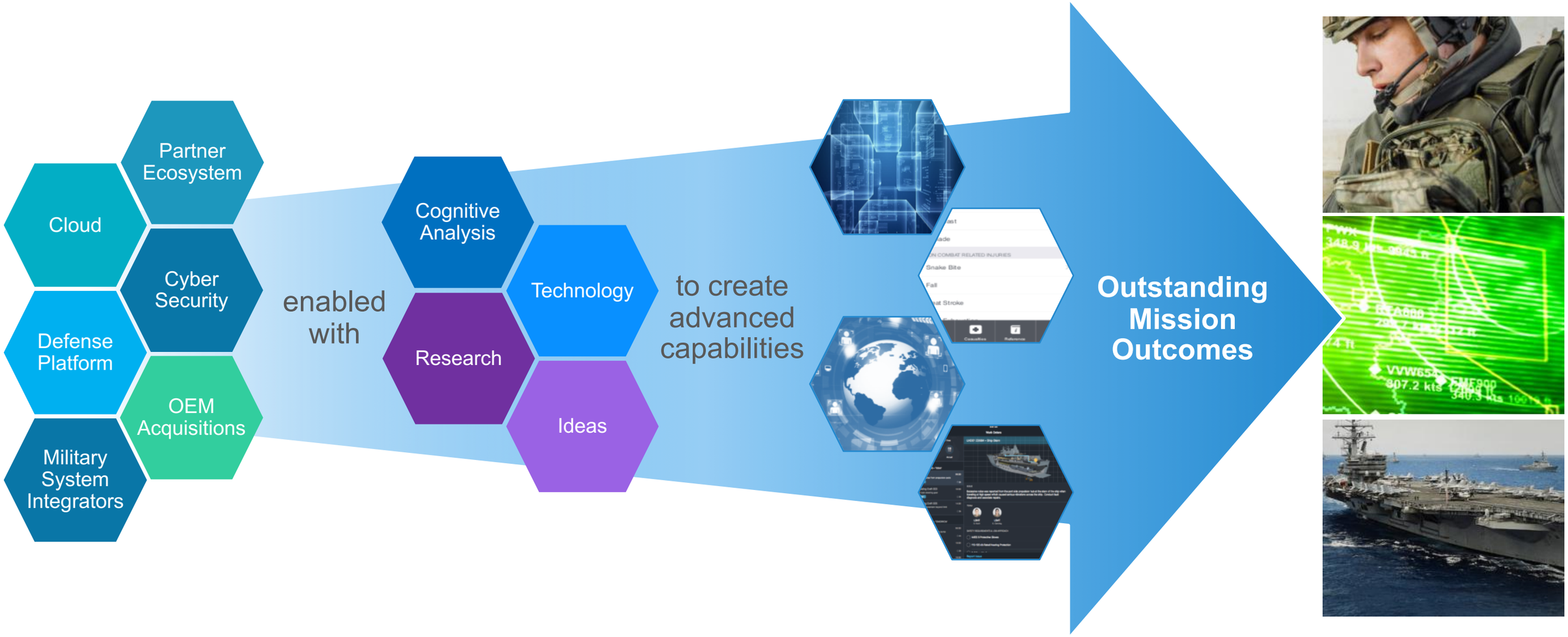
REASON with Confidence

LEARN / Discover

INTERACT in Natural Language

Digital reinvention built on design thinking, agile IT, adaptive talent and user experience

Defense & Intelligence agencies need value from tooth to tail



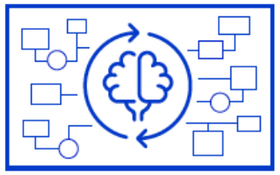
…and a broad set of capabilities leveraged from a robust partner ecosystem, to overcome the velocity of instability

Cloud, Analytics, and AI

- Leverage cloud technology to share and integrate big data bases from multiple programs and sources
- Apply analytics to gain new insights as to performance and outcomes
- Use AI to visualize situational awareness with predictive analysis

Example: Humanitarian Aid & Disaster Management (HADR)

Situationally aware, rapid command and control



Emergency Operations Center

Through Cognitive C2

Current Challenge: Lack of visibility and clear information flow in event of disaster or complex emergency.

Solution: Set-up cognitive command that integrates Big Data in real-time to create a common operations picture (COP) or situational understanding (SU) for all operational activities and provides visualizations for key senior leaders.

Trustworthy, efficient disbursement through Blockchain

Process, Resource, and Payment Tracking

Through Blockchain

Current Challenge: Compliant data gathering, tracking of resources and disbursement of recovery payments is confusing, inefficient, and resource-intensive in a recovery context

Solution: Deploy Blockchain to make tracking resources, submitting forms, and disbursing payments fast and easy.

The internet of resilient infrastructure

Smart Grid and Infrastructure

Through IOT

Current Challenge: Lack of data to support decisions about infrastructure vulnerabilities and improvements.

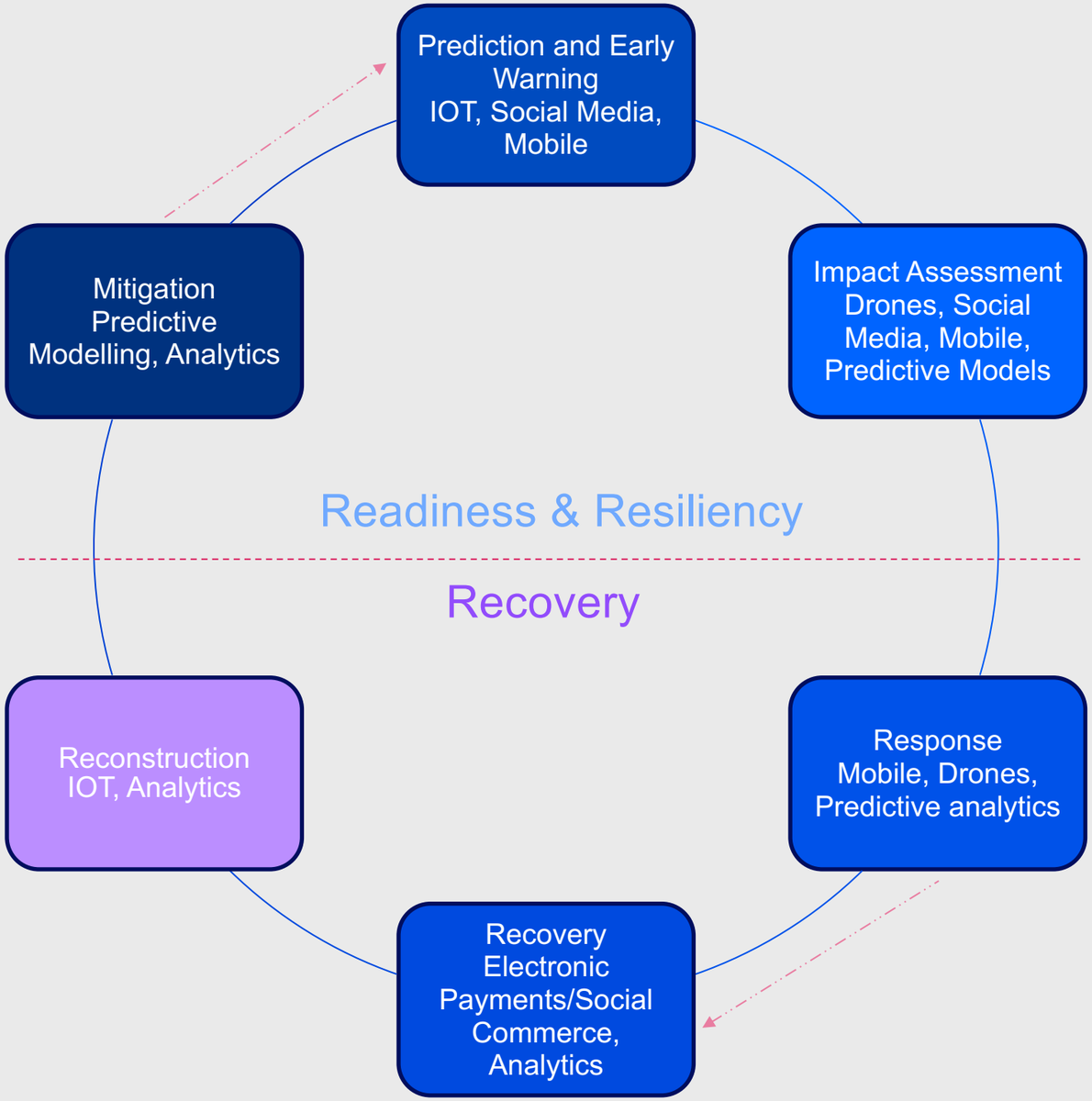
Solution: Install sensors on key infrastructure, integrate data to monitor vulnerabilities beginning with the electrical grid. Apply predictive analysis.

IBM Digital Disaster Management

A user first, insights driven, global platform essential to the readiness and resiliency of public and private organizations before, during and after a natural or man-made disaster to reduce risk and save lives.

Technology has different roles across the disaster lifecycle

According to analysis by reinsurer, Zurich Re, **every $1 spent on readiness saves $5 in future losses**.



$1 to $6: The National Institute of Building Sciences (NIBS) released a finding that every $1 invested in disaster mitigation by three federal agencies saves society $6. *The Natural Hazard Mitigation Saves: 2017 Interim Report.* https://www.nibs.org/news/381874/National-Institute-of-Building-Sciences-Issues-New-Report-on-the-Value-of-Mitigation.htm

Questions & Discussion …

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