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2021 Fall
Technical Forum
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Operational Transformation

The evolution towards Autonomous Networks

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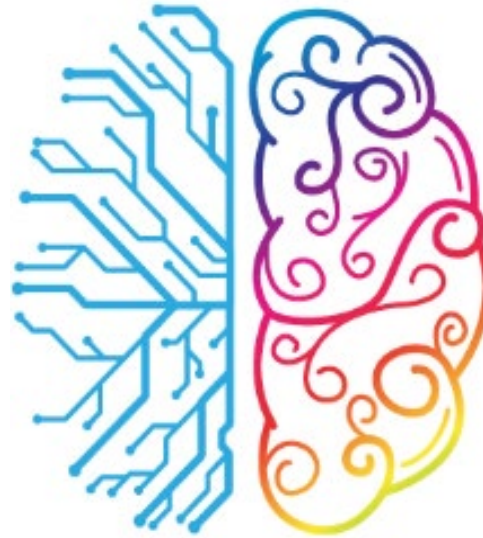
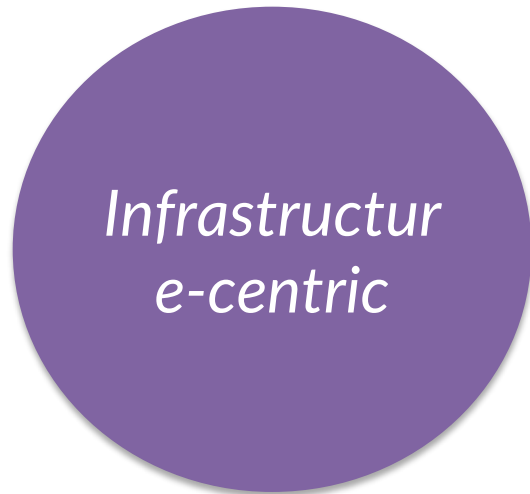


**VIRTUAL EXPERIENCE
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Digital Transformation: From CSP to DSP

Network becoming more Complex

MSO + MNO = CSP



AI Ops

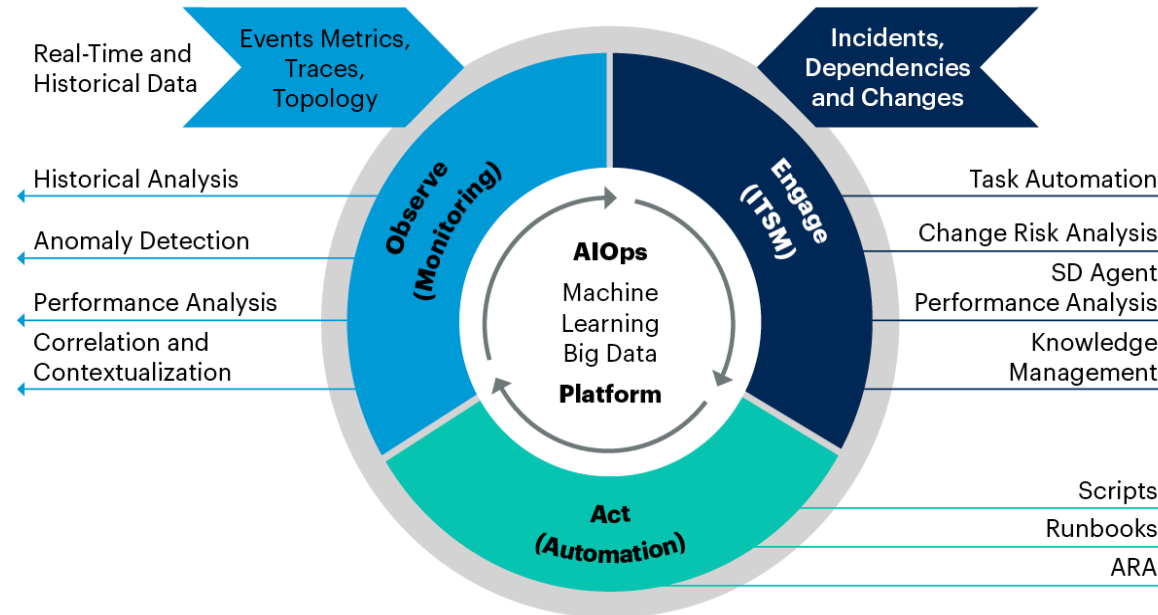


Digital Service Provider



Overview : AIOps , AI to assist Human operation and maintenance

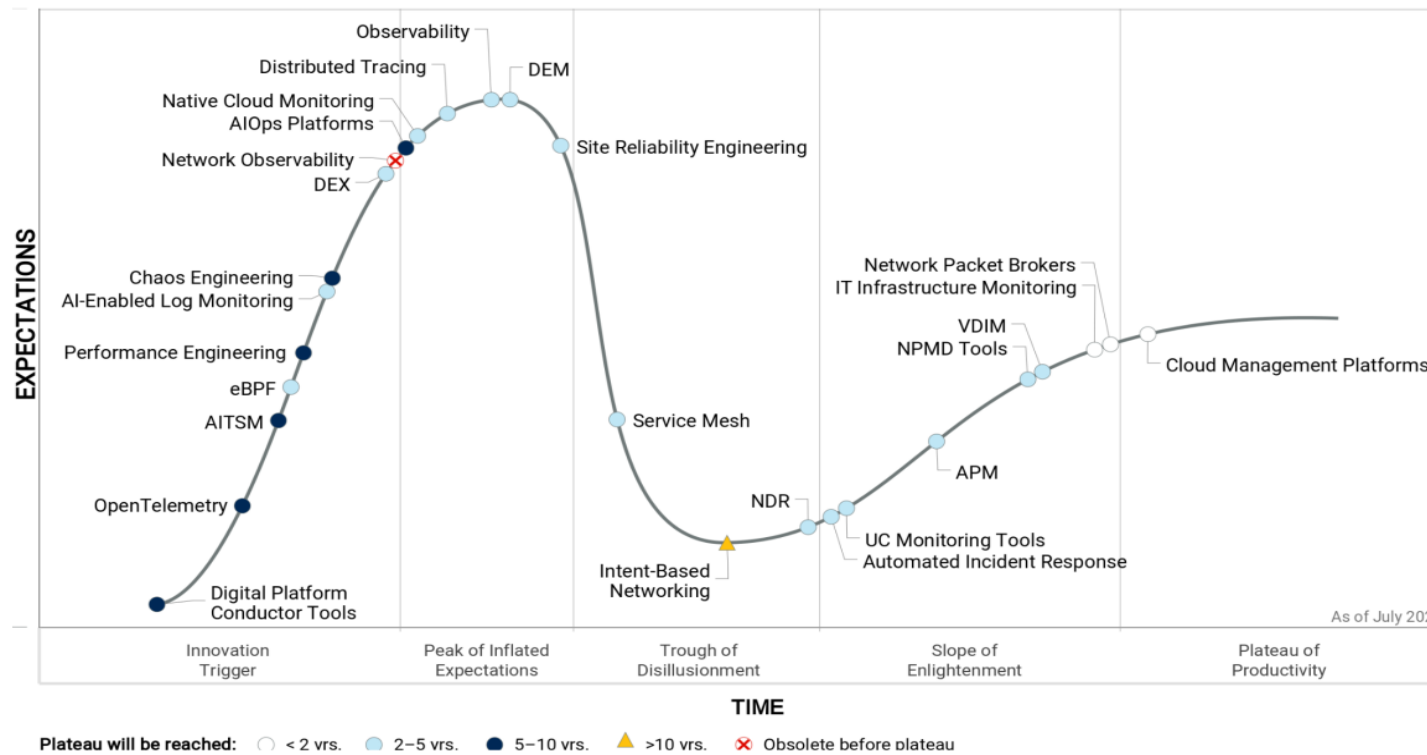
AIOps Platform Enabling Continuous Insights Across IT Operations Monitoring (ITOM)



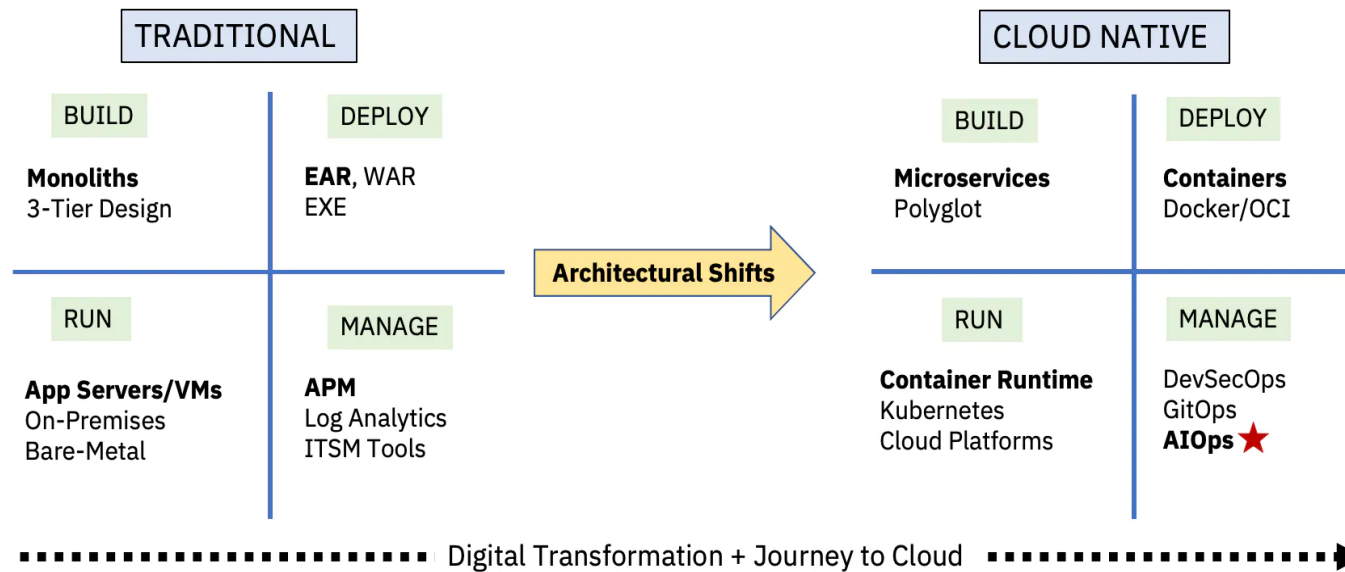
Source: Gartner
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Gartner.

Hype Cycle for Monitoring, Observability and Cloud Operations, 2021

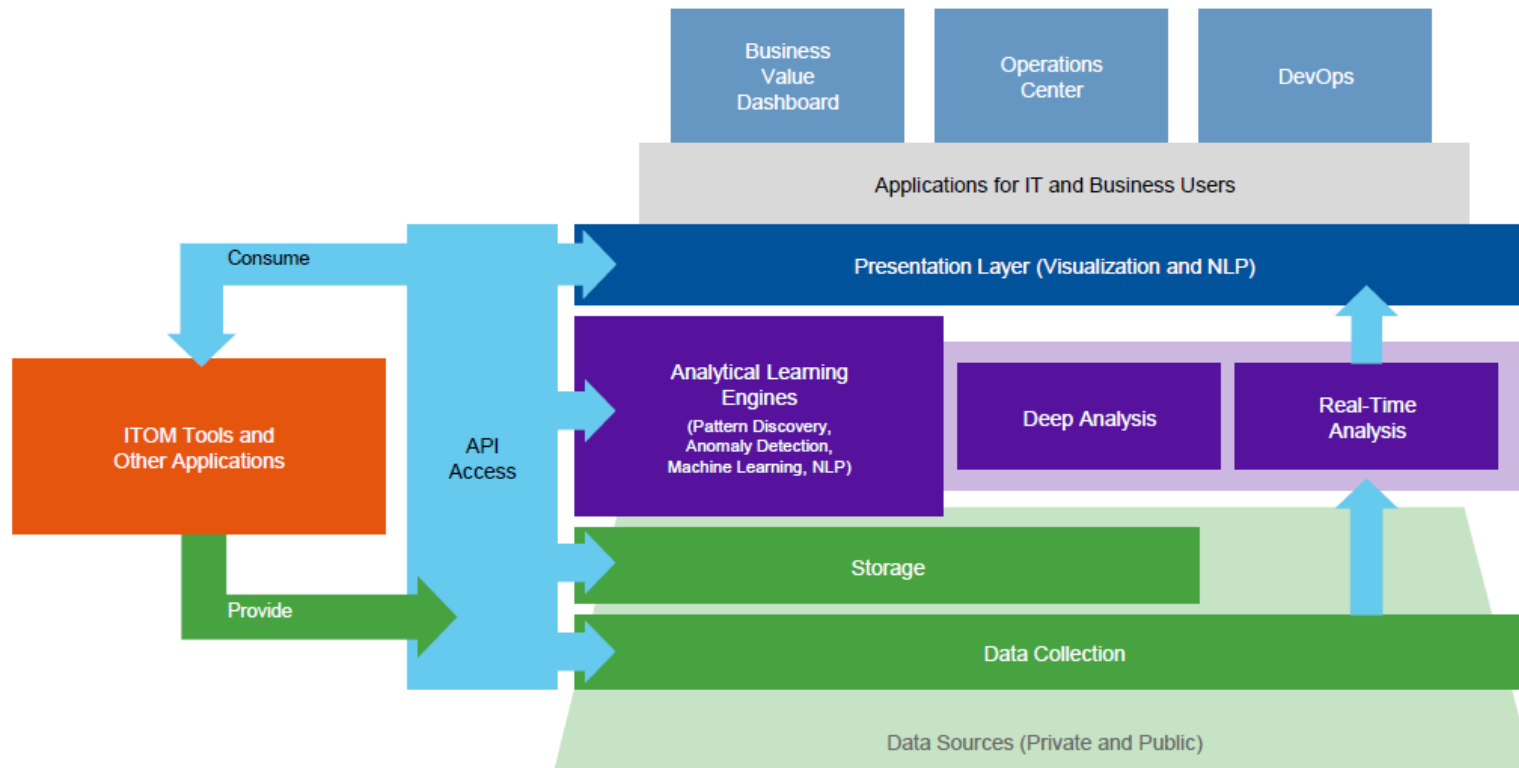


Digital Transformation : Microservices , path to 5G/MEC/10G and AIOps



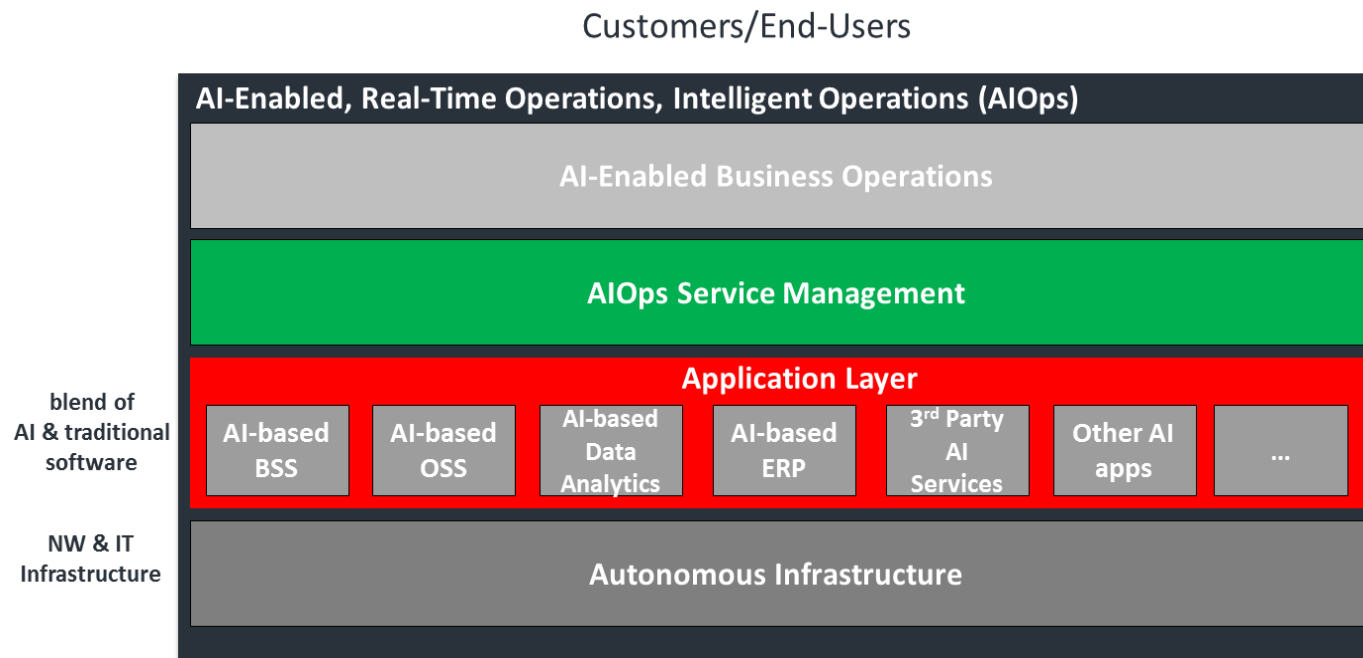
Source : <https://www.ibm.com/cloud/blog/aiops-a-path-to-reliability-at-cloud-scale>

AI Ops: Logical Architecture



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AIOps and AIOps Service Management



Source: TM Forum



Automation should **reduce** labor costs by **90%** as the total cost of any process may be dominated by labor expense



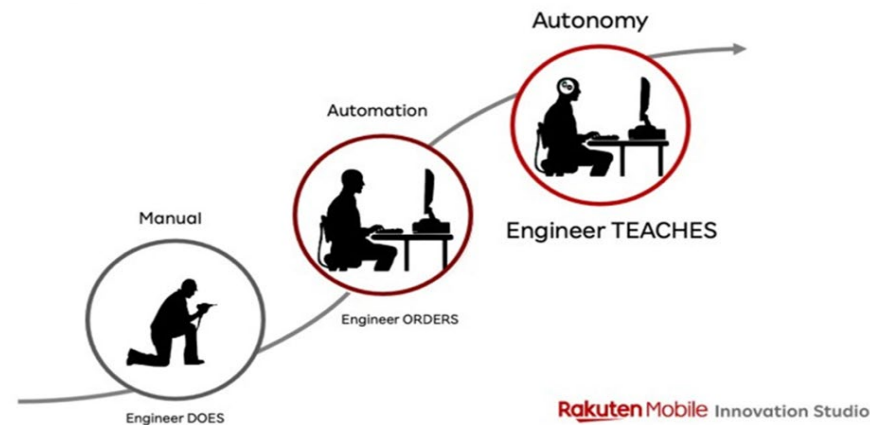
Aim to **reduce** the total time of any process from start to resolution by **90%**



Target a **90%** improvement in the time required to introduce a new service

What is Autonomy?

“Autonomous networks, put simply, enable our engineers and technicians to go off and chase really interesting problems, leaving the less interesting problems to be operated by software systems”



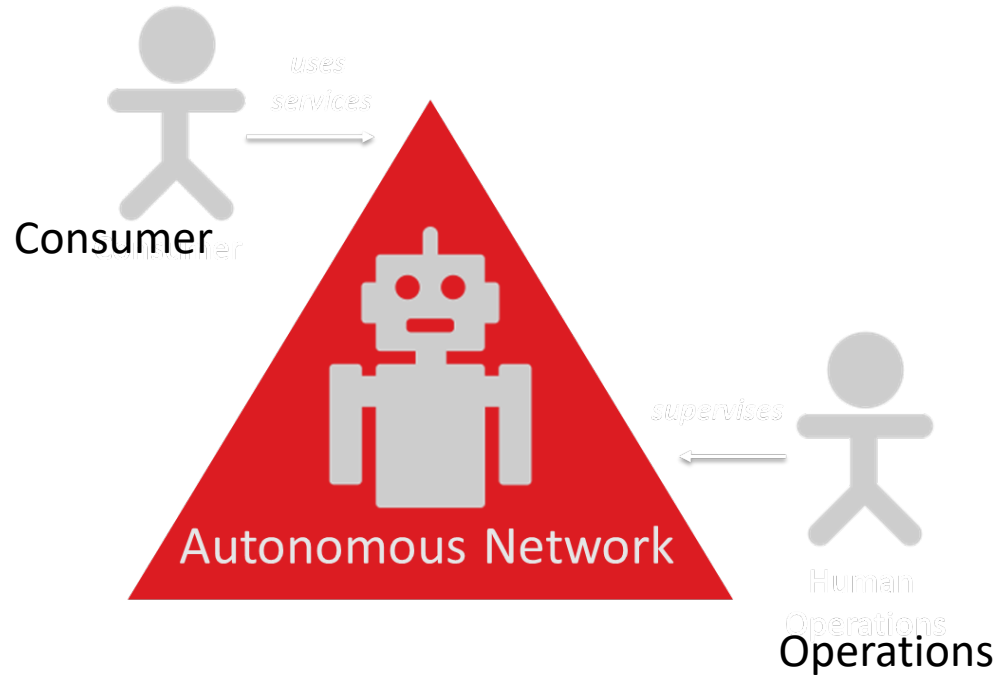
6 Levels of Autonomy

Autonomous Levels	L0: Manual operation & maintenance	L1: Assisted operation & maintenance	L2: Partial Autonomous Networks	L3: Conditional Autonomous Networks	L4: High Autonomous Networks	L5: Full Autonomous Networks
AN services (Zero X)	N/A	Individual AN case	Individual AN case	Select AN cases	Select AN services	Any AN services
Execution	P	P/S	S	S	S	S
Awareness	P	P	P/S	S	S	S
Analysis/ Decision	P	P	P	P/S	S	S
Intent/ Experience	P	P	P	P	P/S	S

Personnel (manual)
 Systems (autonomous)

Source: TM Forum

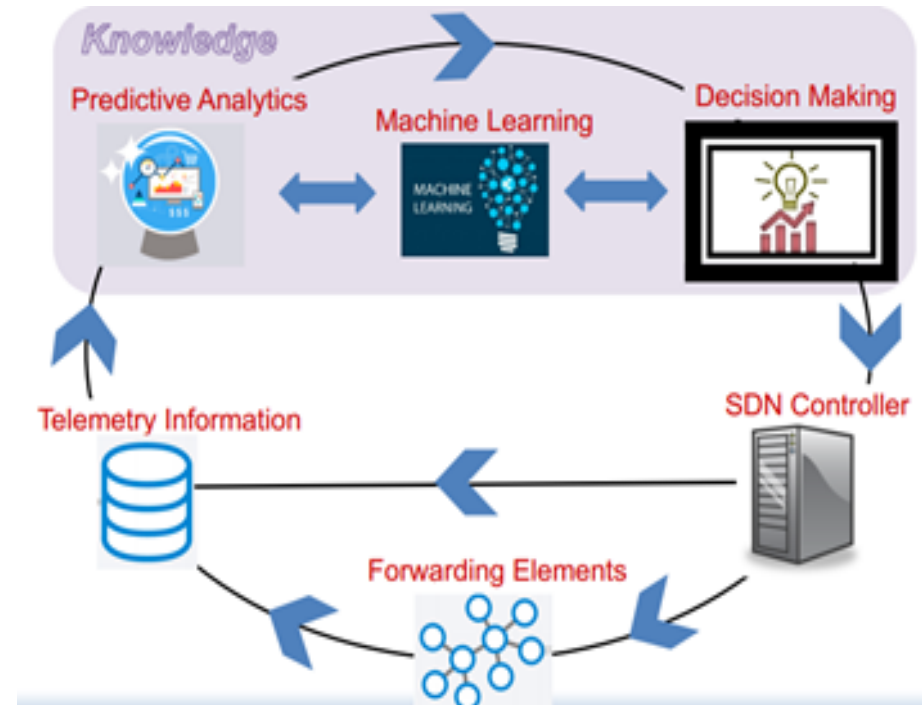
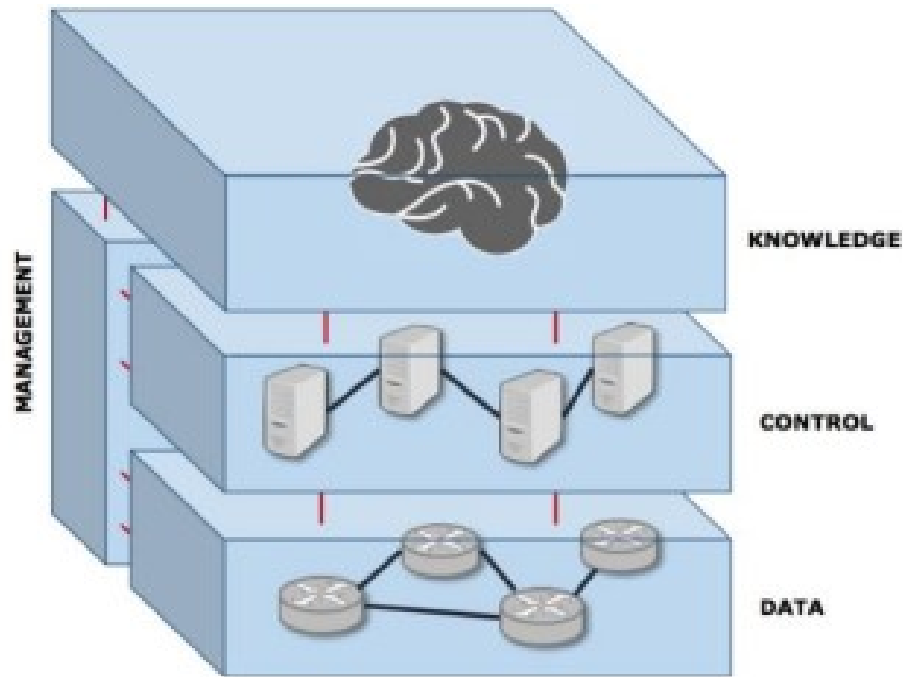
Humans are part of the AN



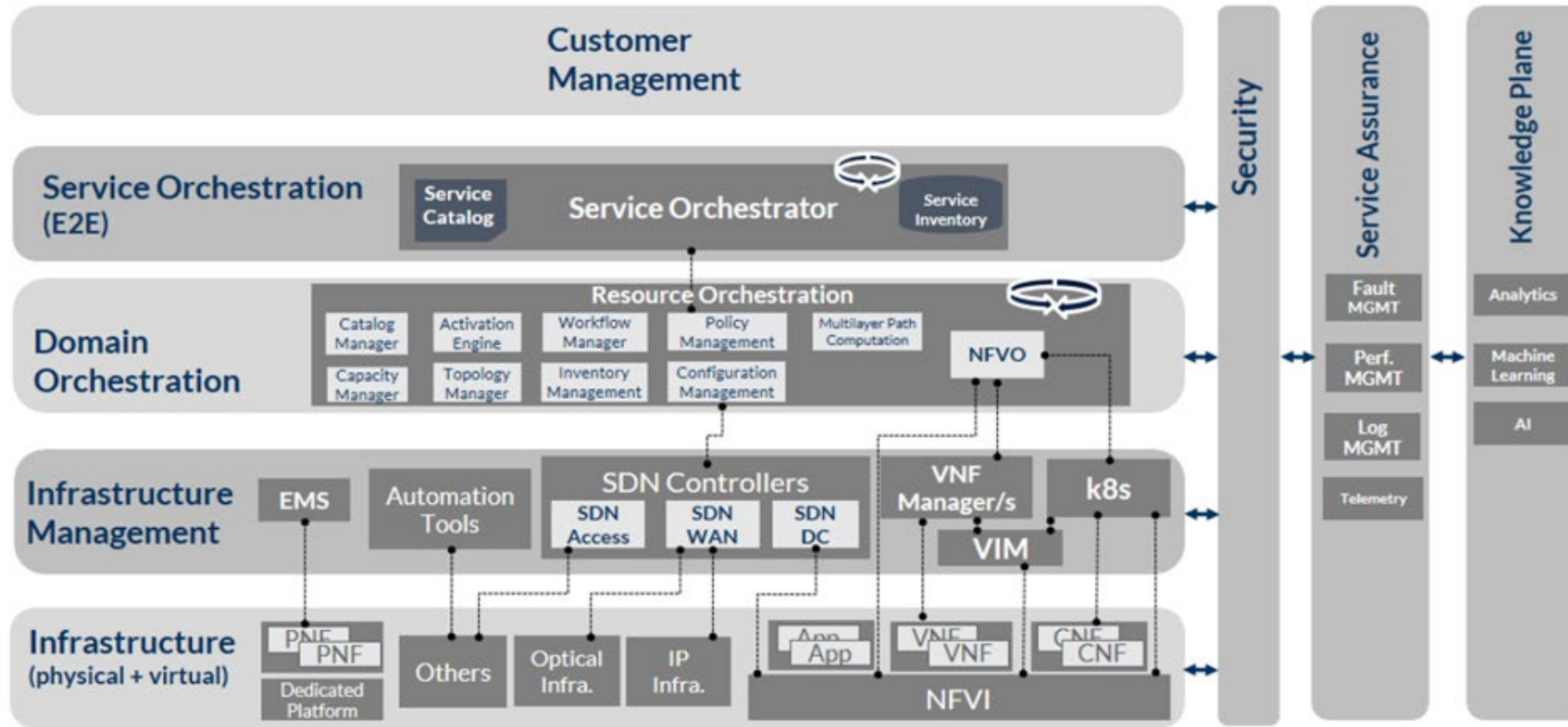
AN frees human operations from particular routine tasks and even alleviates some decision-making workload.

AN takes human operations from being “in the loop” to being supervisors “on the loop”

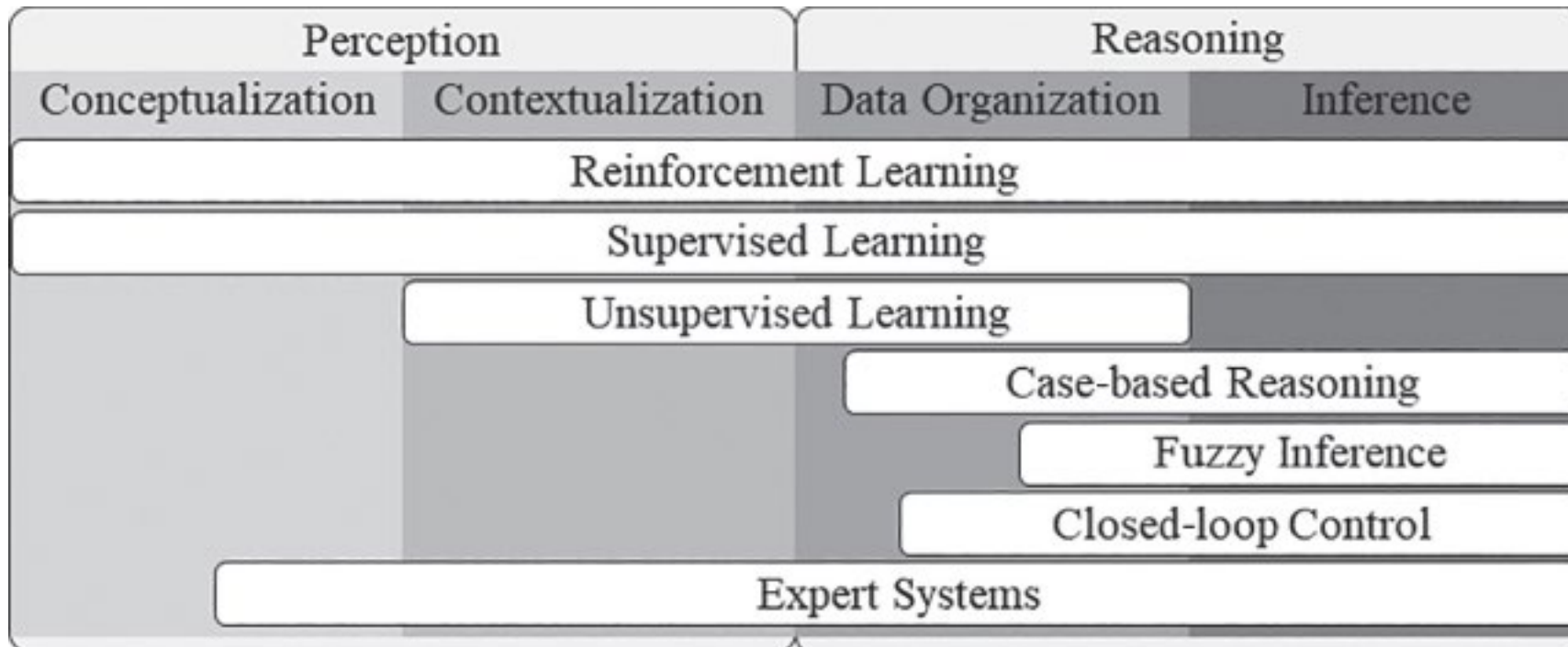
Knowledge Plane



Knowledge Plane Integration



Capabilities of the different automation techniques



Source: Towards Cognitive Autonomous Networks, Wiley, 2020.

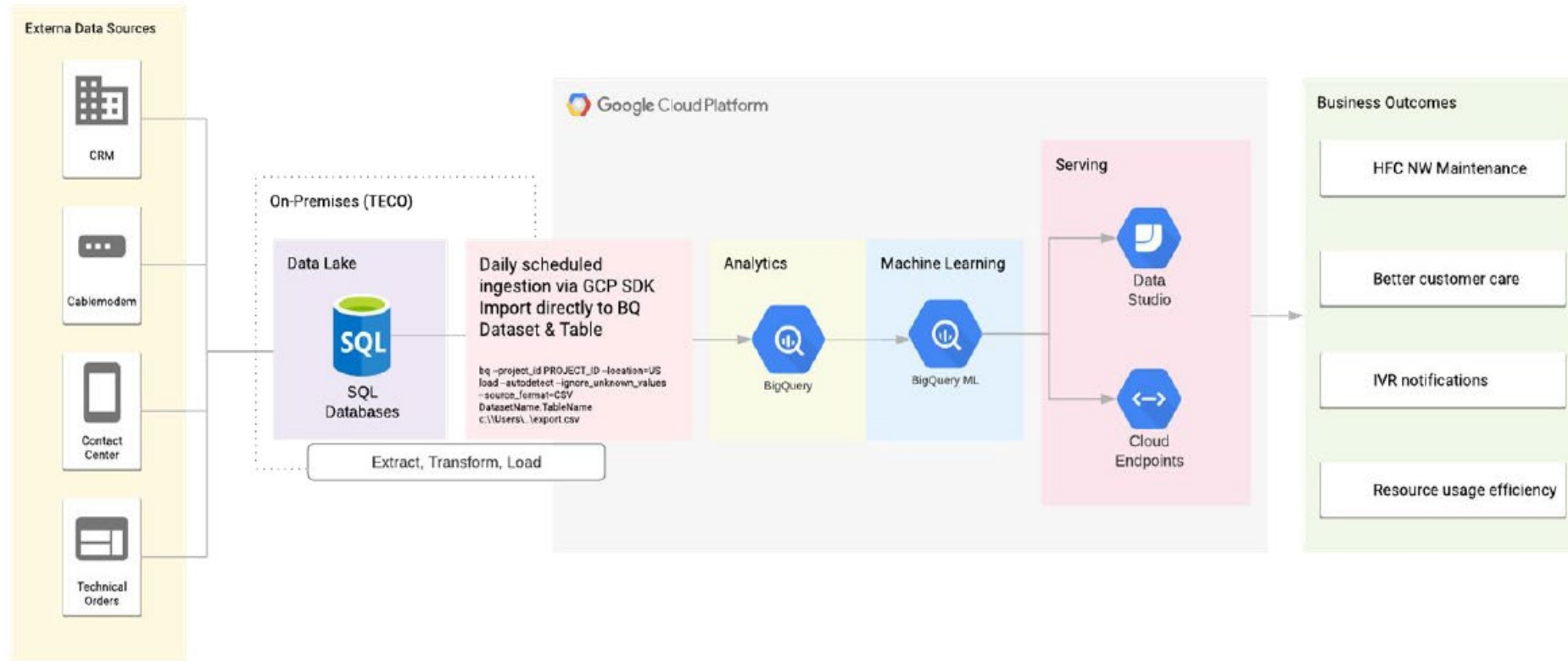
AIOps at Telecom Argentina

There are a few initiatives that we have considered within the AIOps framework

Nowadays, as a STEM team one of our missions is to lead AIOps in our current and future networks. Our recipe within STEM team is diversity, work in cells, agile mindset, and self-learning

- Ada
- Customer claim prediction

Customer claim prediction



Conclusions



**Without AI Ops 5G and 10G
will simply be more of the
same**



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Thank You!

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