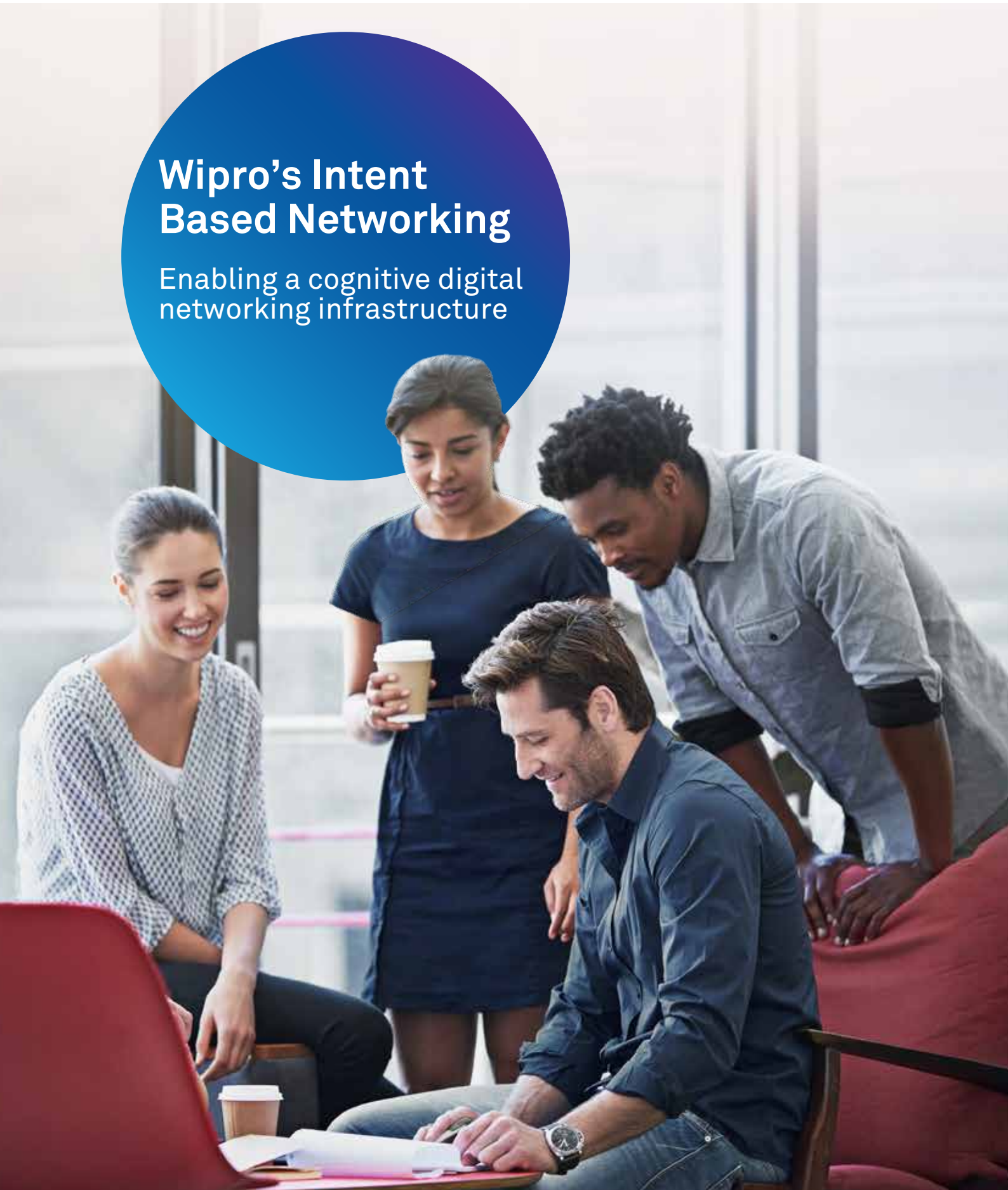




# Wipro's Intent Based Networking

Enabling a cognitive digital networking infrastructure



## Introduction

For any enterprise, the success of rapidly evolving business models largely depends on how the enterprise network aligns itself with business needs and polices on an on-going basis. This calls for a new approach wherein the network architecture continually aligns business intents and policies with the network infrastructure, making it secure and dynamic.

The software defined networking (SDN) solves this problem to some extent. But SDN abstracts network and network services to the Infrastructure as a Service (IaaS) layer to make the network available to business users. This means network engineers continue to have their own layer to monitor, configure and troubleshoot using network management tools and platforms.

## Roadblocks posed by traditional networks

Traditional network architectures fail to align with business needs dynamically and scale elastically to meet the demands of the digital era due to the following drawbacks:

- **Closed and hardware-centric:** The box-by-box provisioning and management of network elements increases the rollout time and slows down the rate of response to business needs
- **Manual operations:** Manual operation and maintenance process are highly error prone and time consuming
- **Security:** Perimeter-based, reactive posture results in security gaps
- **Lack of network visibility:** Lack of predictive and comprehensive network visibility leads to reactive actions
- **Policy management:** Distributed and network-centric polices make it difficult for network policies to align with business priorities
- **Lack of user-centric approach:** Typical IP address-based policy definitions make troubleshooting a cumbersome process, requiring multiple tools that increase the complexity of network operations

## The solution: Wipro's Intent-Based Networking

Wipro's Intent Based Networking solution (see Figure 1) creates a cognitive digital networking infrastructure to dynamically align the networking infrastructure of the data center, wide area network and user access network, with changing business policies and intent. The result: an automated programmable network that connects business applications to network elements such as software defined network (SDN), software defined wide area network (SD-WAN), software defined access (SD-A) controllers and traditional networking switches - using a standardized application programmable interface(API).

Wipro's Cognitive Intelligence Platform™ acts as an orchestrator, connecting multiple networking elements with standard APIs. It enables dynamic network operations and IT service management by connecting to Wipro's ITSM layer ServiceNXT™. The Intent-Based Networking solution is implemented in conjunction with three other key solutions - Secure Network Access, #WANFreedom and SwiftSDN for data centers - which co-exist with traditional networking elements.

The Intent-Based Networking solution delivers contextual network-based insights, automates processes and protects against threats. It learns the performance needs of all applications and services and continuously adapts itself to achieve the required service quality.

Furthermore, it automatically and consistently applies access policies between users, applications and devices - across the network. The solution also understands operational compliance requirements and verifies that golden software images and patches are applied on an on-going basis.



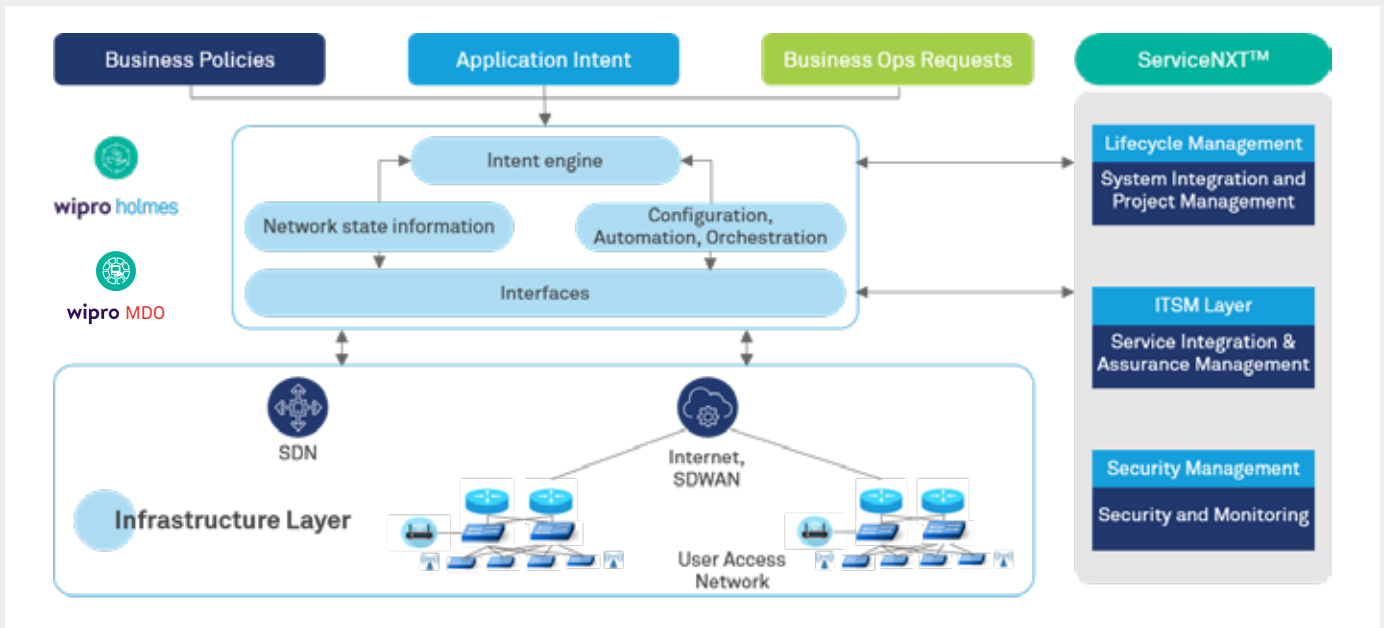


Figure 1: Wipro's Intent-Based Networking Solution

## Underpinned by Cisco architecture and capabilities

Wipro's Intent-Based Networking solution is powered by Cisco® Digital Network Architecture (DNA) - an open, extensible, software-driven architecture that accelerates and simplifies enterprise network operations, while lowering costs and reducing risk. It provides a single network fabric that is powered by deep intelligence and integrated security to deliver automation and assurance across the entire organization at scale. Cisco DNA enables the IT team to focus on innovation by handling time-consuming, repetitive network configuration tasks. Cisco DNA automation and assurance are built on a foundation of software-defined networking (SDN) controller, rich contextual analytics, network virtualization, and the limitless scalability of Cloud.

**Assurance:** Proactively predict performance through machine learning, identify issues and provide actionable insight to deliver better, more personalized experiences

**Security:** Mitigate threats with end-to-end network segmentation and enforce security policies across the network – even in encrypted traffic

**Virtualization:** Deploy network services in minutes on any platform – branch, colocation or public cloud – and connect users to applications with one seamless network

**Open platform:** Align to business intent by making the network open and extensible for integration with other systems and applications

## Solution features

**Centralized management:** Design, provision, enable policy, and assure network services through centralized management

**Automation:** Fully automate the network infrastructure based on one policy across the entire access network, and simplify and scale operations by automating day-to-day configuration and provisioning



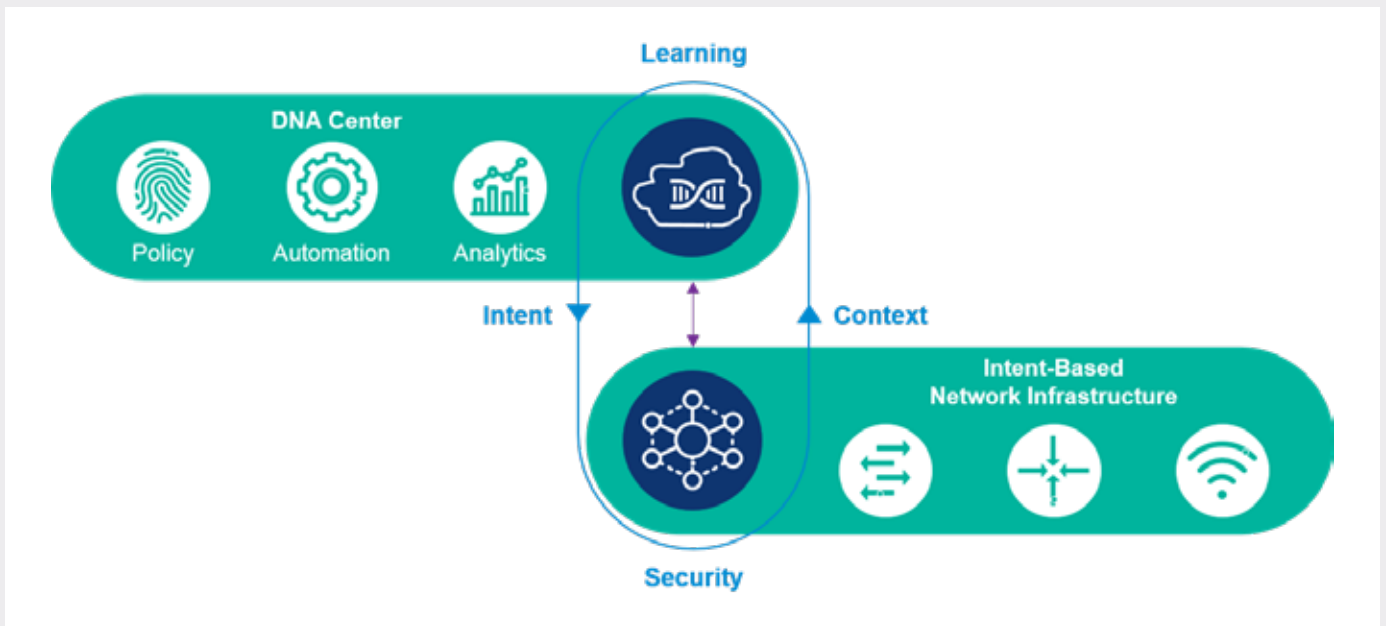


Figure 2: Intent-based network framework

## Benefits



## Unleashing the combined power of Wipro and Cisco DNA™

### Cognitive Digital Network Infrastructure (CoDNI)

A cognitive intelligence platform for digital networks powered by Wipro Holmes™ using Cisco DNA as the platform

CoDNI is a unified purpose-built platform with cognitive intelligence that uses Cisco DNA Center as the platform. It makes use of the API and adaptors and is powered by Wipro Holmes™

orchestrator (Heuristics and Ontology-based Learning Machines and Experiential Systems). The Holmes™ platform is an artificial and cognitive intelligence platform of digital virtual agents, predictive systems, cognitive process automation, visual computing applications, knowledge virtualization, robotics, and drones.

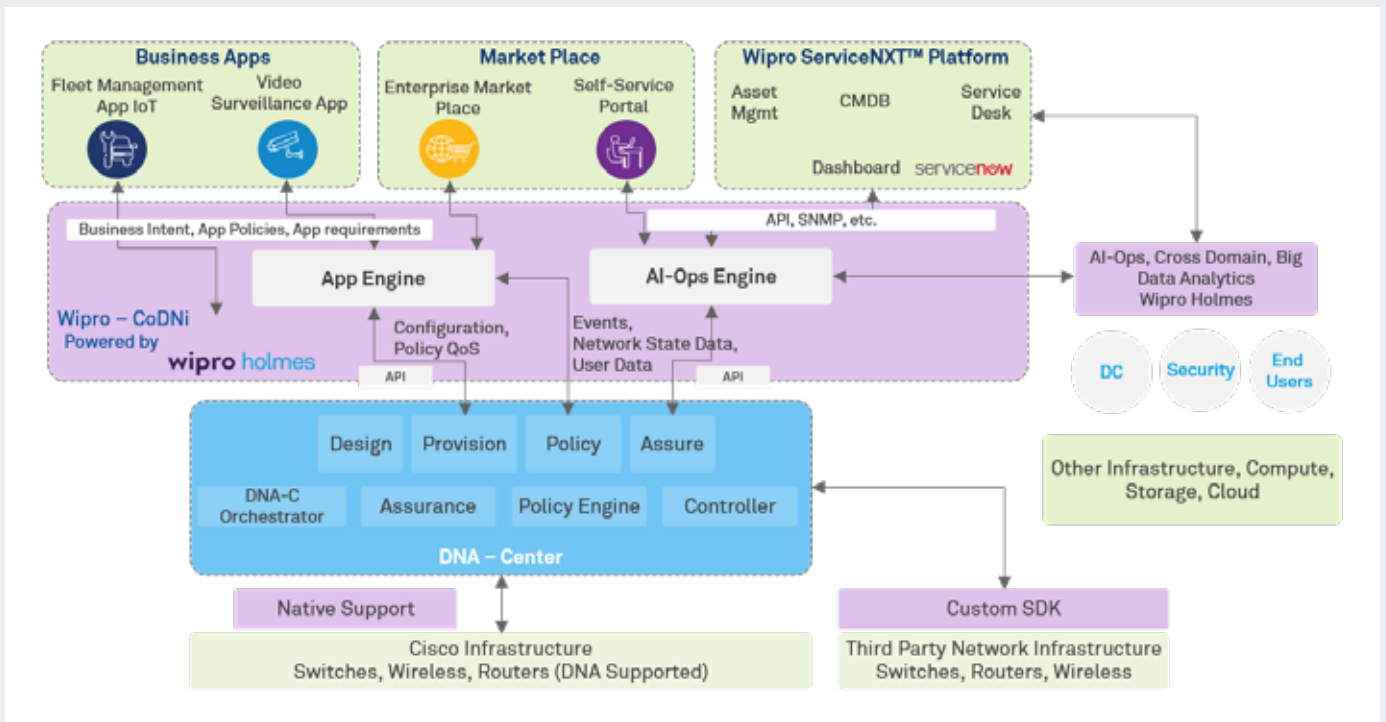


Figure 3: A cognitive intelligence platform for digital networks powered by Wipro Holmes

## Wipro services

The Connected Future Network practice of Wipro offers industry standard network services to

enable a smooth transformation towards an intent-based network architecture.



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