

# Switch to NFV/SDN with *A Happy Mind!*

From Concept to Reality!



**happiest minds**  
The Mindful IT Company  
Born **Digital** . Born **Agile**

Enterprise and service providers are seeking solutions to their networking challenges today and want their networks to adjust and respond dynamically, based on their business policy.

Software-defined networking (SDN) is an architecture purporting to be dynamic, manageable, cost-effective, and adaptable, seeking to be suitable for the high-bandwidth, dynamic nature of today's applications. SDN architectures decouple network control and forwarding functions, enabling network control to become directly programmable and the underlying infrastructure to be abstracted from applications and network services and hence has become a defacto solution to the network challenges of today.

This may not be as easy as it sounds. The main goals would be to automate so that they can

reduce the manual work and personnel cost of running their networks. They want to quickly deploy and run new applications within and top of their networks so that they can deliver business results. And they want to do this in a way that allows them to introduce these new capabilities without disrupting their business.






Now this is a tall order and there is no single point solution which can help achieve all of the above.

Here's where Happiest Minds comes in with state of the art Engineering Services revolving around NFV+SDN Technologies and our experts help in simplifying the complexities of these technologies to help you make the complete switch from Concept to Reality. **Our aim – Switch over to SDN with a happy Mind.**

## What we do!

Happiest Minds is committed to support OEMs, ISVs & Service Providers in design, development & deployment of Network Function Virtualization, Traditional, Software-defined and Hybrid networks. Be it a commercial grade solution or implementation of proof of concept for potential use cases, Happiest Minds can be your trusted engineering partner. We provide complete product lifecycle services from concept to deployment and support.

Our services include

-  **System Design**
-  **Software Development**
-  **DevOps**
-  **Testing**
-  **Analytics**

# Happiest Minds' SDN/NFV Engineering Service Propositions

## Network Function Virtualization (NFV)

- VNF development, porting, testing, deployment and maintenance
- MANO (Management and Orchestration)
- Service Chaining
- Customization of Open source NFV and SDN Solutions
- NFV Orchestration and Integration with OSS/BSS
- Adapters for legacy service management

## Software Defined Networking (SDN)

- Commercial and Opensource SDN Controller Engineering, customization and feature enhancements
- South bound provider development for SDN, Legacy and Hybrid switches.
- OpenFlow enablement conformance
- SDN Application development, upgrades and migration across controllers
- SDN controller integration with OpenStack Neutron
- Engineering Services for customization and enhancements of Open Source Solutions like OpenDayLight, ONOS etc.
- SDN- NFV solution integration

## Network Stack Engineering

- Switching and Routing protocols, Traffic Engineering
- Security, VPN, Firewalls, DPI & policy enforcement, WAN optimization, server Load balancing, dynamic bandwidth management
- Intel DPDK porting and optimization for high performance
- EMS/NMS frameworks
- UX/ UI Engineering

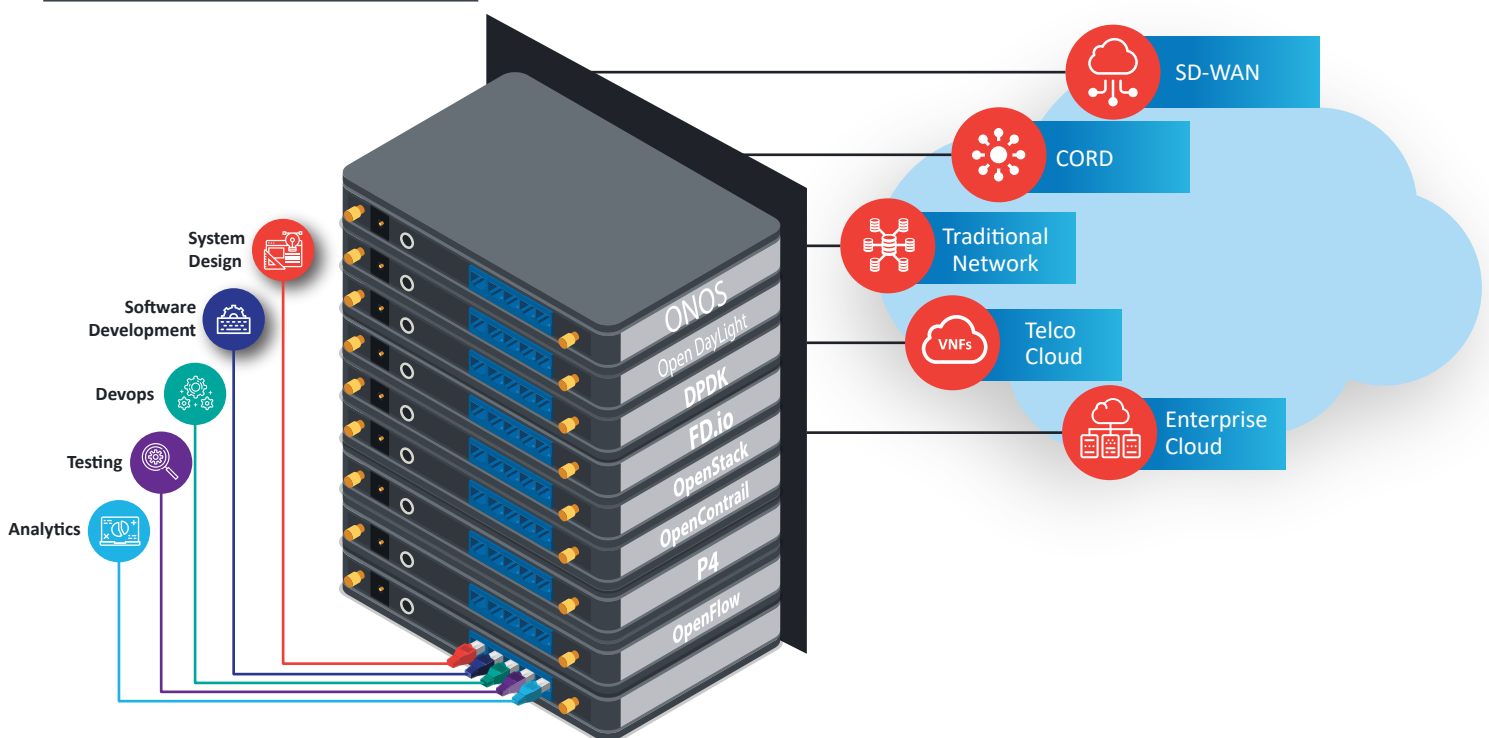
## NFV Testing

- NFV Infrastructure Testing
- NFV-O integration & Testing
- VNF Pre-Certification Test & Benchmarking
- VNF Service Chaining & Network Services Testing
- Openstack Enabled Network Applications, VNF
- VNF-VFNM Integration Testing
- VNF Performance (RFC 2544)

## SDN Testing

- Open Flow conformance & Functionality Testing (South Bound API)
- SDN Controller Functional Testing
- Multi-SDN Controller testing
- Yang Models, NetConf, Yaml, Rest API Testing
- Testing SDN Applications using SDN controller based deployments
- SD-WAN Orchestration / Manager validation

## Expertise Stack



# Significant Achievements

We have helped several Tier 1/ Tier 2 NEMs, Service providers and SDN platform vendors. Our recent projects include,



**End to End SDN and Virtualization transformation services** to a Tier-1 OEM in Packet Monitoring Systems by leveraging SDN controllers, White Box switches and VNF development.



**Cost Effective SDWAN solution** for a broadband service provider, targeting SMEs; efficiently manages enterprise WAN, with the capabilities to introduce new services, monitor bandwidth utilization, and dynamically steer DPDK accelerated traffic.



**NFVi Engineering compliant to ETSI MANO** for a leading platform OEM



**Real-Time, Scalable and Precise Network Visibility** for an emerging provider of Network performance analytics, transforming the network for perhaps the largest food chain of the world



**Innovative, Cost-effective Network Packet Broker and SSL decryption** appliance with multi-environment support for a leading global Packet monitoring systems vendor.



**Unified Centralized Management Controller** with High Availability and multiple protocol support like SNMP, NETCONF, OpenFlow etc. for managing heterogeneous devices.

## Alliances



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## About Happiest Minds

**Happiest Minds**, the Mindful IT Company, applies agile methodologies to enable digital transformation for enterprises and technology providers by delivering seamless customer experience, business efficiency and actionable insights. We leverage a spectrum of disruptive technologies such as: Big Data Analytics, AI & Cognitive Computing, **Internet of Things**, Cloud, Security, **SDN-NFV**, RPA, **Blockchain**, etc. Positioned as “Born Digital . Born Agile”, our capabilities spans across product engineering, digital business solutions, infrastructure management and security services. We deliver these services across industry sectors such as retail, consumer packaged goods, edutech, e-commerce, banking, insurance, hi-tech, engineering R&D, manufacturing, automotive and travel/transportation/hospitality.

Headquartered in Bangalore, India; Happiest Minds has operations in USA, UK, The Netherlands, Australia and Middle East