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**Virtual Network Function (VNF) onboarding
is simply more than VNFD configurations**

Credits

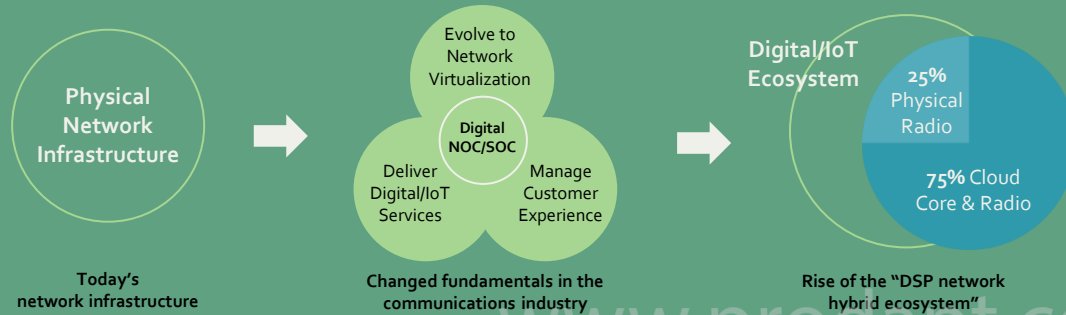
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Key business drivers for DSPs to adopt Virtual Network Function (VNF)

More and more DSPs are adopting VNF to reap the benefits of virtualization



Accelerate service realization with VNF
for faster time-to-value

Reduced time to market
for increased capacity to launch and get feedback

Reduced complexity for the DSPs in terms of service mapping
VNF & service onboarding made simple

VNF onboarding ecosystem: Players and their key tasks

VNF Supplier's Tasks

- Design & Develop
- Package & Certify
- Configuration & Release File
- S/W Adapters

Service Provider's Tasks

- Continuous Service Feedback
- Service Assurance KQI/KPI
- Health Check
- Service Design & Instantiate Service
- Test & Certify

VNF Integrator's Tasks

- VNF onboarding & Product catalog onboarding
- Acceptance of VNFaaS
- Other O/BSS system integration

- Service Chaining
- Provide MANO
- Stack Adaptation
- Service Design
- Instantiate Service
- Certify & Service Assurance

Other Vendors' Tasks

(existing systems)

Vendor-specific integration service, if any

Collaborative Rollout

Collaborative Feedback

Collaborative Rollout

This insight talks about the key challenges in VNF onboarding and provides recommendations with special focus on integration with O/BSS systems and product catalogue

Key challenges in VNF onboarding and integration - The major bottlenecks for VNF adoption



Common VNF onboarding misconceptions

There is a popular misconception that VNF onboarding involves just the three following steps:

Getting the VNF image from the vendor

Loading it on to management and orchestration (MANO) platform

Making the necessary changes in the configuration files and service package templates

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However, VNF onboarding is not that simple and many DSPs face major challenges during the VNF onboarding process. Some of them are listed below.

Huge customization and integration efforts are involved in the service providers' existing setup as well as in VNF image to make virtual function operate within a broader ecosystem (across legacy O/BSS & product catalogue systems) and manage services over its lifecycle.

In order to realize service onboarding, VNF has to be service chained in the underlying network. Any preexisting VNFs should also be considered and chained in the operators SDN-NFV platform.

All the change cycle runs result in endless discussions with the VNF provider and the service provider which results in technical glitch during transition & rollout for any VNF and realization of VNF as a Service (VNFaaS)

Recommended VNF onboarding process and key considerations to realize faster 'ready for service'



It is recommended to look beyond the configuration files and implement a robust onboarding process in a holistic way right from VNF image validation to VNF ready for service and continuous innovation.

1

Product Definition & Catalog Onboarding

- Once VNF image is received from vendor, creation of product catalog populated for each VNF descriptors
- Product definition in the catalog for each VNF deployment flavor (example: vFW_LARGE, vFW_MEDIUM, vFW_SMALL)

Key considerations

- Mirror the VNF product/service configurations for seamless integration across O/BSS systems such as:
 1. **Product catalogue/ inventory**
 2. **Self-care**
 3. **Order management**
 4. **Assurance**
 5. **Billing system**
- Build the revenue generation chain for VNFaaS in Virtual Infrastructure Manager to support models like
 - Pay-as-you-grow
 - Pay-as-you-need
 - Dynamic/flexible billing capability (based on services consumed by VM/tenant)

2

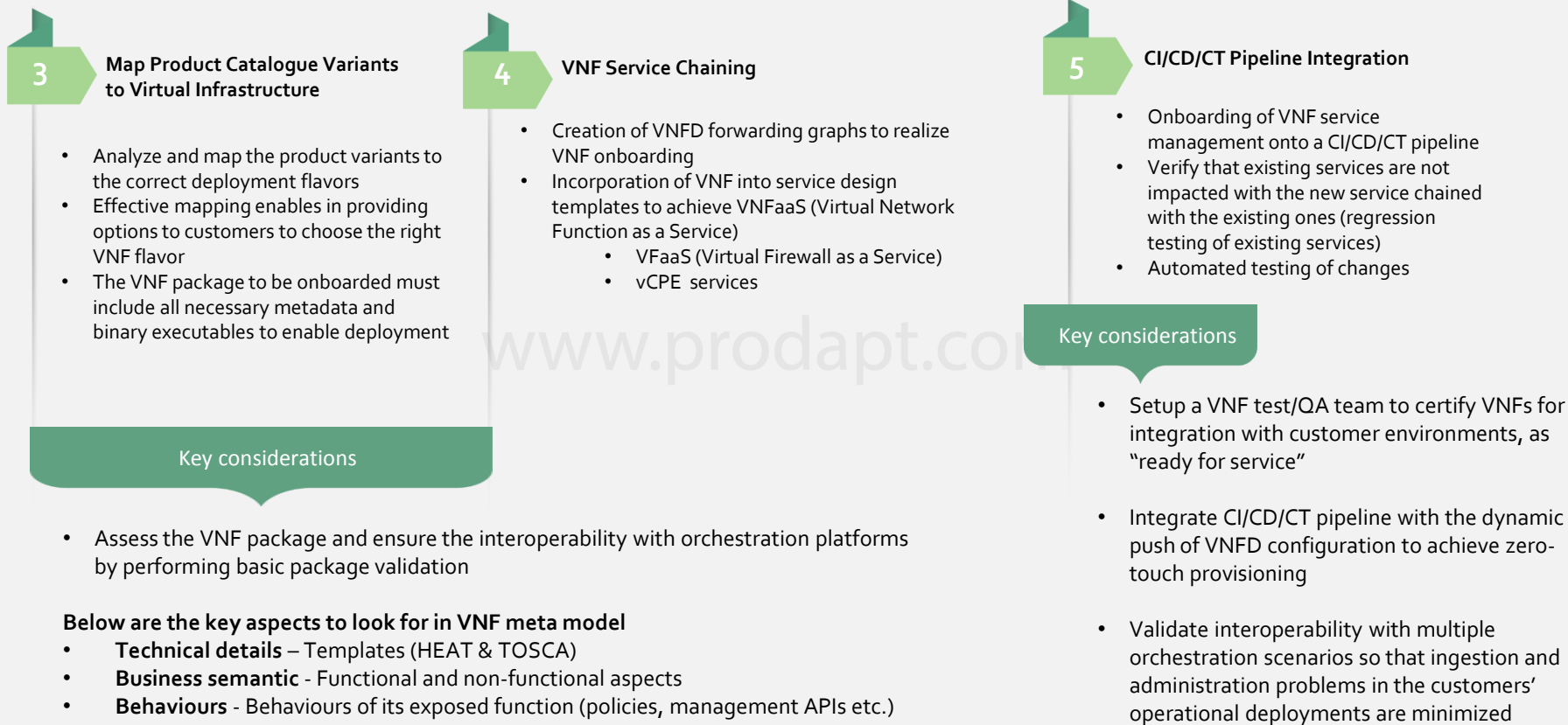
VNFD Customization & Parameterization

- Tailor-made and parameterized VNFD to accommodate run time inputs in order in-take process (e.g. customer order form)
- Integration of VNF workflow with O/BSS systems for order delivery

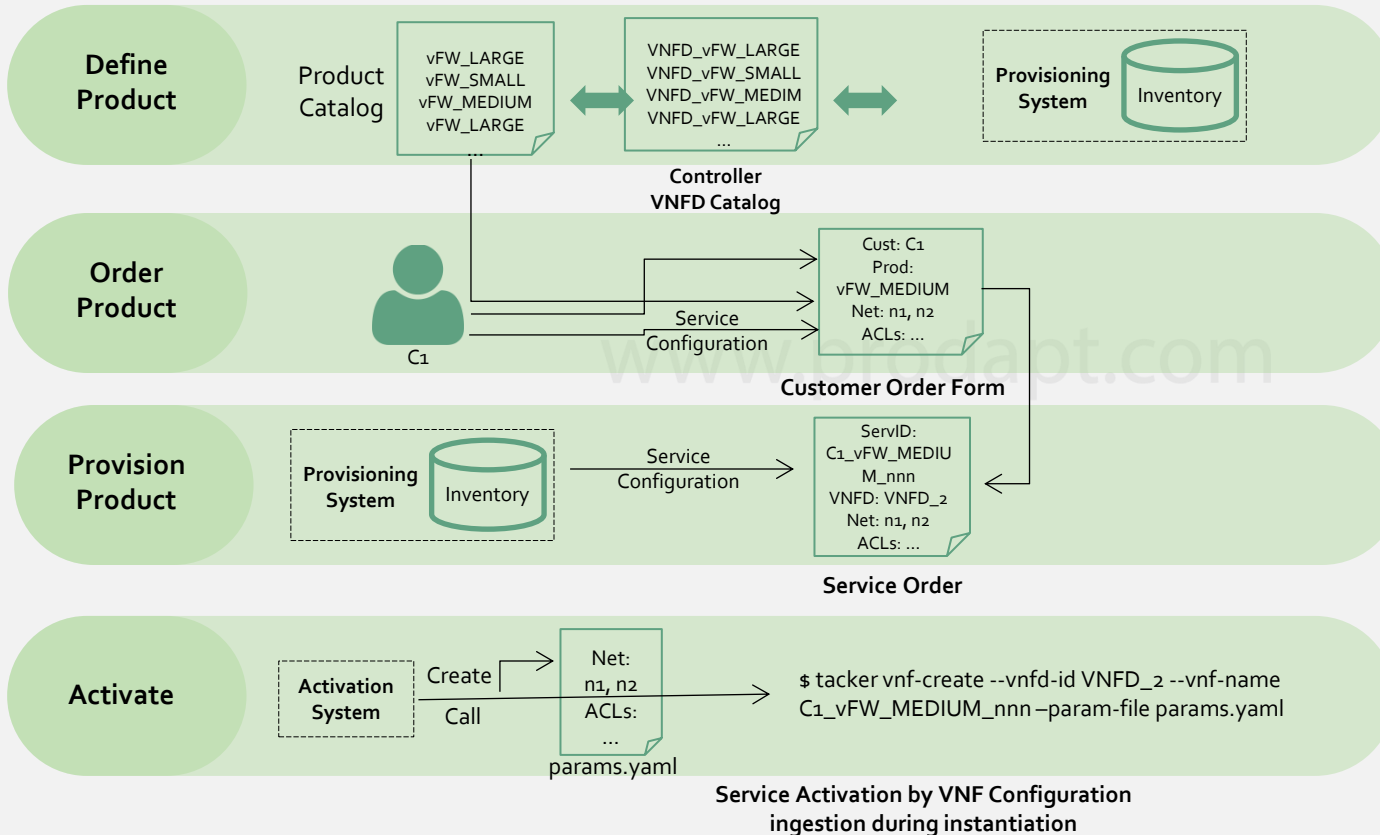
Key considerations

- Service configuration elements should be passed as parameters from customer service order form to the actual service template during service order activation
- VNF package incorporation into service design/blueprint along with service instantiation
- Monitor the VNF with the help of VNFM/EMS (Element management system) and **readjust** resources as per the requirements of **VNFaaS**
 - Ensure service runs at desired speed/throughput
 - Ensure virtualization advantages (autoscaling, flexibility, agility)

Recommended VNF onboarding process and key considerations to realize faster 'ready for service'

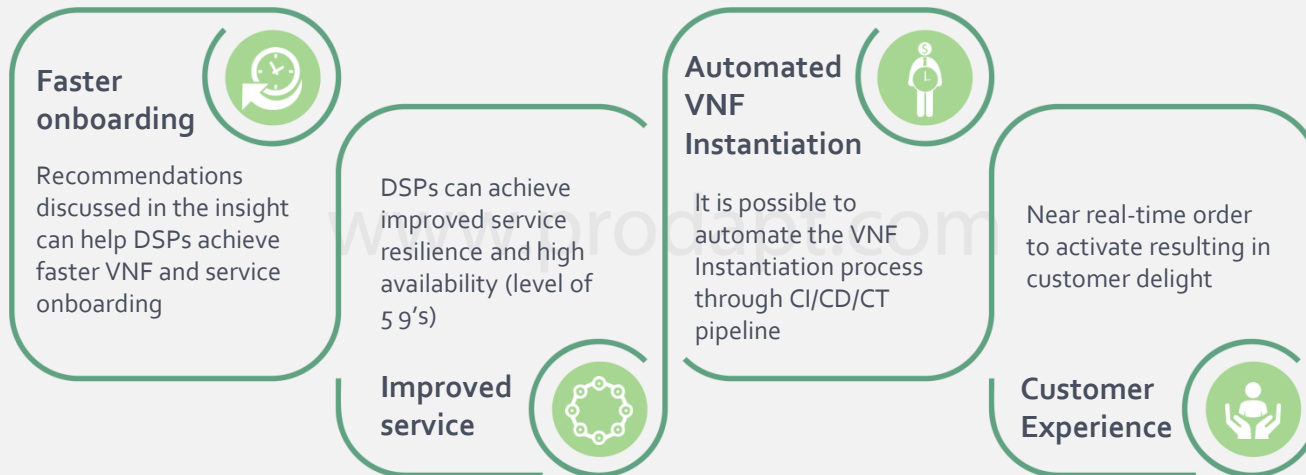


'Order to Activate' process for a virtual function post VNF onboarding



- Onboarding/configuration of services/products into catalog, OM & orchestration, inventory, activation platforms
- Creation/customization of VNFDs
- Creation/customization of forwarding graphs
- Parameterization of configuration files for easy integration with upstream systems
- VNF instantiation using Tacker as VNFM & NFVO on specific target VIM compute node to spin up a new VM

Key takeaways





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