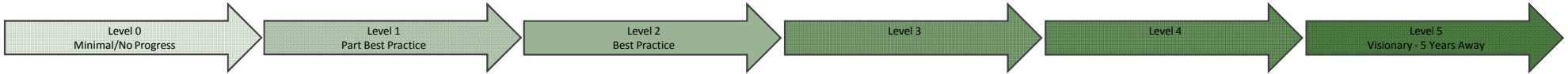
Data Center Maturity Model



IT

Network

7.1	Utilization		• Utilization not measured	• Understand network infrastructure and port utilization • Manual port switching capability - e.g. turn off unused ports	• Average monthly utilization (bandwidth usage divided by bandwidth capacity) is greater than 40% in the data center • V-LAN implementation	• Average monthly utilization (bandwidth usage divided by bandwidth capacity) is greater than 65% in the data center • Virtualized Network Infrastructure - routing, forwarding, load balancers and firewalls	• Average monthly utilization (bandwidth usage divided by bandwidth capacity) is greater than 75% in the data center	• Average monthly utilization (bandwidth usage divided by bandwidth capacity) is greater than 90% in the data center • Manage spare network capacity to maintain utilization target (e.g. selling spare capacity)
7.2	Workload		• Data volume not measured	• Identify data volumes	• Identify data flows • Optimize data volumes to reduce bandwidth requirements - e.g. data compression technologies	• Minimize data movement	• Prioritize data volumes and flows • Compute optimizes data flows (calls) to minimize movement, network consumption and energy consumption • Improve application use of network resource bandwidth	• Ability to adapt network configuration/IP details - abstract from hardware and linked to application - "Follow the Moon" strategy
7.3	Operations		• Dedicated network links • Disparate complex networks	• Consolidate and simplify multiple networks	• Application and hardware decommissioning – identify hardware that has no or minimal input/output as strong candidates for decommissioning		• Centralized simplified network built at resilience needed by business	
7.4	Technology		• Inefficient components • All network infrastructure and ports enabled and powered		• Automated port switching capability - turning off unused ports	• Energy proportionality of major power consuming components (Processor, Fans, PSU)	• Energy proportionality of all components	• Energy proportionality - based on application requirements • Smart components - energized on demand
7.5	Base performance		• Performance not measured	• Understand bits per watt for network equipment		• Measure actual bits per watt for all future designs and majority of actual deployments		
7.6	Provisioning		• Capacity Management not in place	• Inefficient capacity management (peak, average, total capacity) - overprovisioned bandwidth	• Tracking and managing to utilization targets	• Provision capacity on usage not reserved capacity (understand peak and average utilization)	• Dynamic provisioning of bandwidth based on actual usage	• Automated provisioning