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June 2017

디지털 트랜스포메이션 가속을 위한 어플리케이션 플랫폼 전략

Agenda

- 디지털 변혁에 따른 산업 동향
- 새로운 어플리케이션 개발 플랫폼
- 트랜스포메이션을 위한 다음 단계

디지털 변혁에 따른 산업 동향

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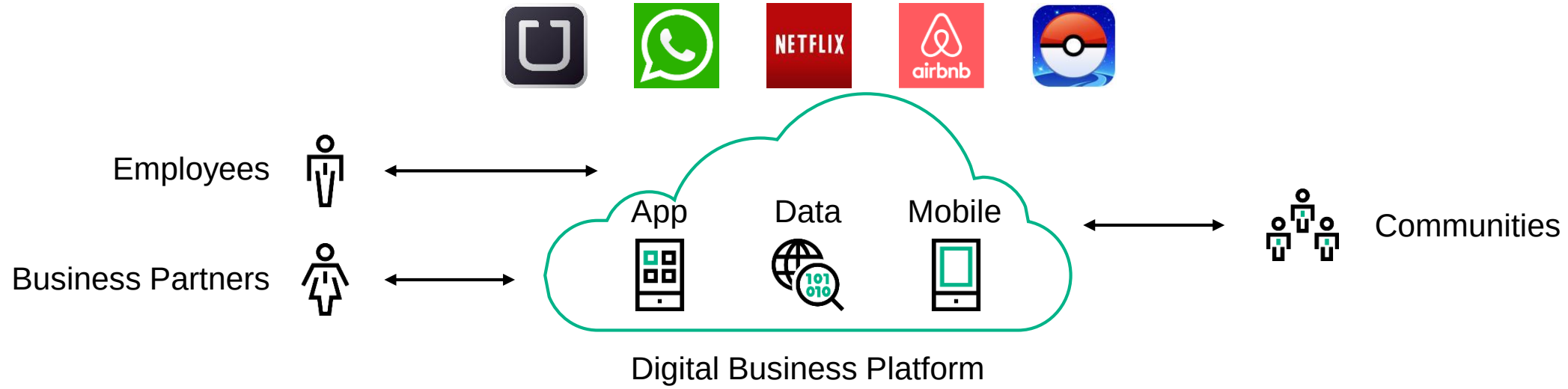
아이디어 경제 (Idea Economy)에서 누구나 세상을 바꾸는 것이 가능

모든 것이 디지털… 어디서나, 언제나, 누구와도 연결됨	모든 비즈니스가 디지털 비즈니스가 되고 있음	모든 산업의 경계가 급격히 붕괴되고 있음
▪ 모바일, SNS, 클라우드 등으로 필요한 정보에 접근하고 언제든지 고객, 동료 및 협력사와 끊임없는 커뮤니케이션과 협업이 가능해짐	▪ 신규 서비스 창출과 수익 극대화를 위하여 다양한 정보로부터 가치를 이해하는 것이 핵심 역량으로 자리잡고 있음	▪ 기존 전통적 강자들은 지속적으로 위협 받고 있으며, 신생 기업이 새로운 방식으로 경쟁 우위를 점하고 있음



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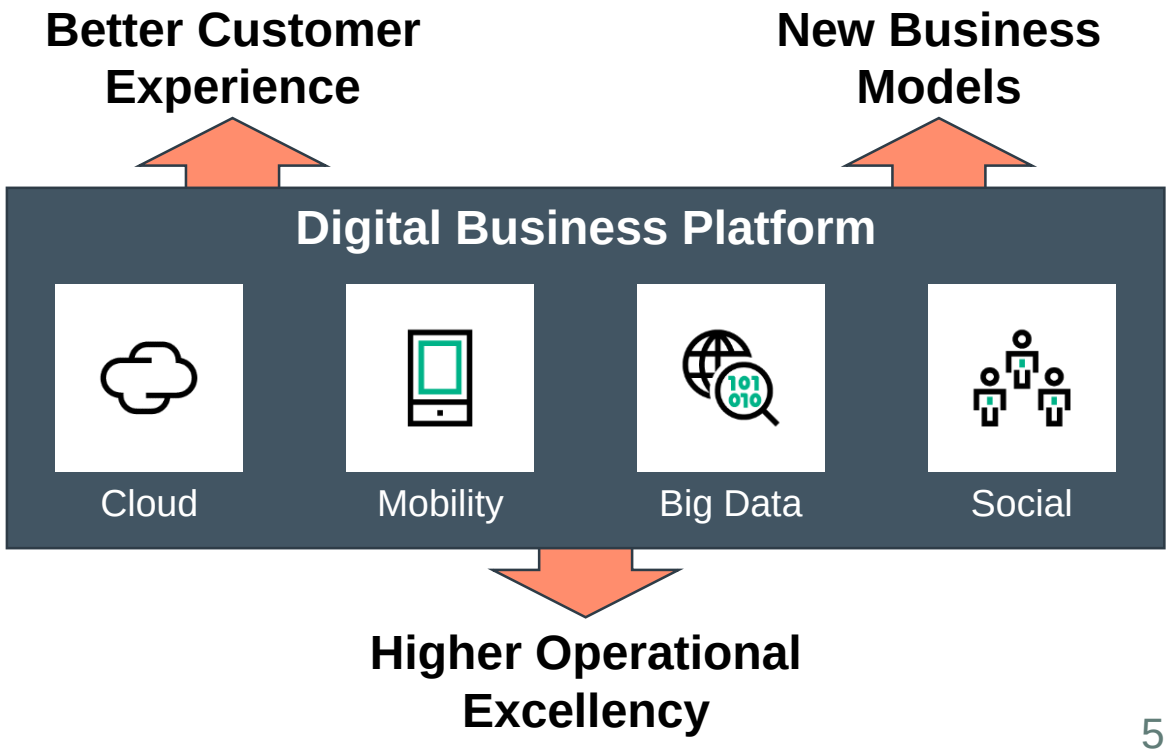
Digital Transformation은 비즈니스 혁신의 핵심 전략

신규 비즈니스 모델, 제품 및 서비스 개발을 위해 클라우드, 빅데이터 등 디지털 역량을 적극 활용

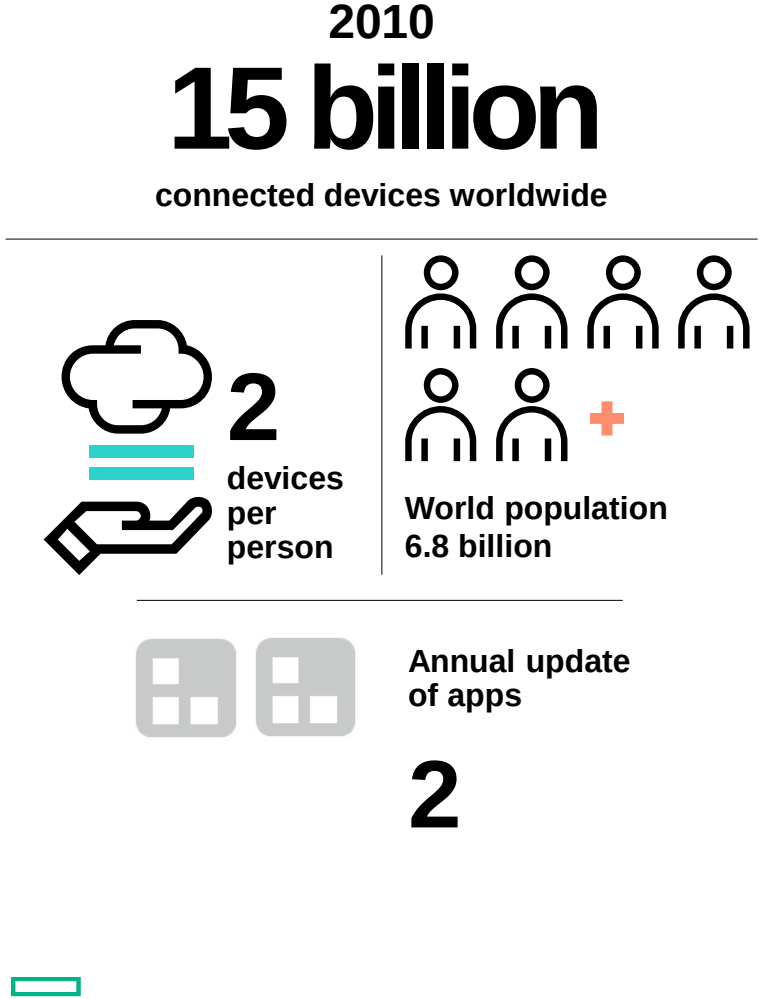
Digital Transformation:
The continuous process by which enterprises adapt to or drive disruptive changes in their customers and markets (external ecosystem) by leveraging digital competencies to create new business models, products, and services

Source: IDC



“Digitization”은 라이프스타일은 물론 인프라에 대한 요구를 변화시킴

새로운 방식의 비즈니스에 적합한 인프라 환경으로의 전환 필요



- IT 인프라는 대규모의 커넥티드 디바이스를 지원하게 됨
- 기술을 도입하고 관리하는 방식 자체가 변화되어야 함
- 어플리케이션 및 서비스가 개발되고 제공되는 과정을 재정의 해야 함

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어플리케이션이 비즈니스에 미치는 영향

기존 방식으로는 새로운 비즈니스의 요구를 충족하기 어려움

Started Service

X500 more access

No time for New Server/Storage

Expansion of Containers

Handled Demand & New Loc. Launch

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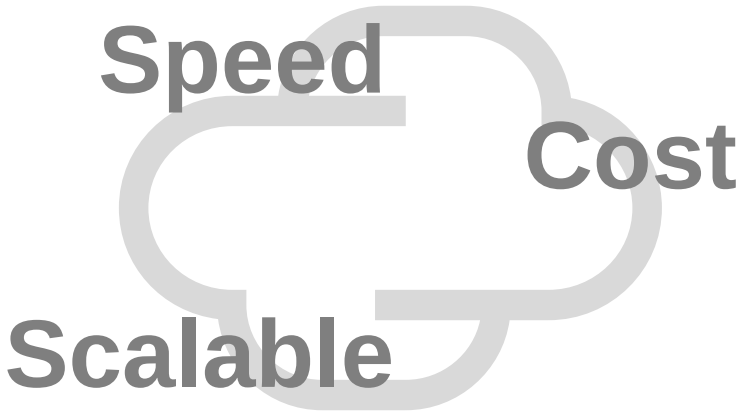
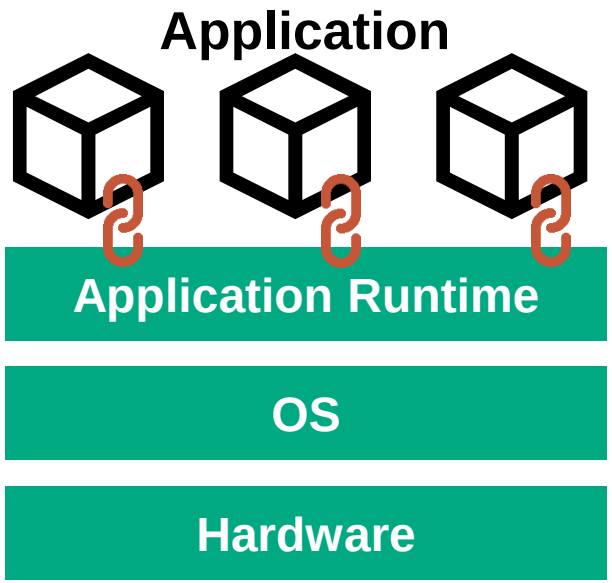
새로운 어플리케이션 플랫폼 필요성 대두

전통적 어플리케이션 개발의 제약을 해소하고 개발 그 자체에 역량을 집중할 수 있어야 함

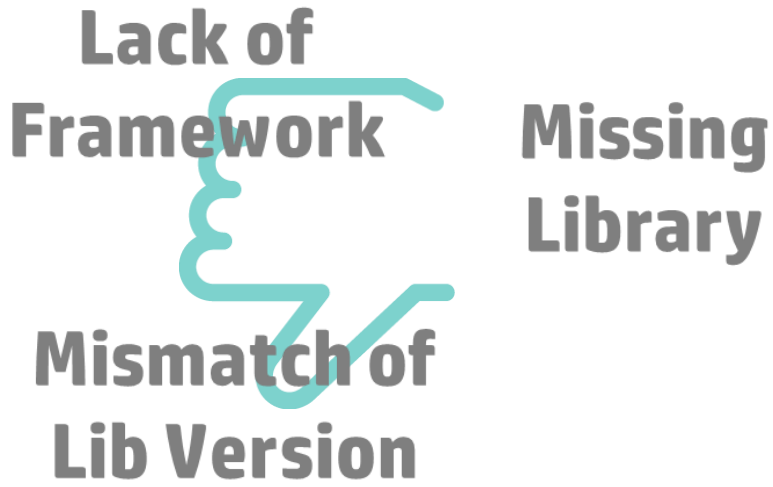
Business demands more



Application is tightly coupled w/ runtime



App development often faces issues due to…



Elimination of “Hardware + OS Setup”, “Runtime Build”, and “Library Management” would greatly help the acceleration of application development

새로운 어플리케이션 개발 플랫폼

Container as a Service

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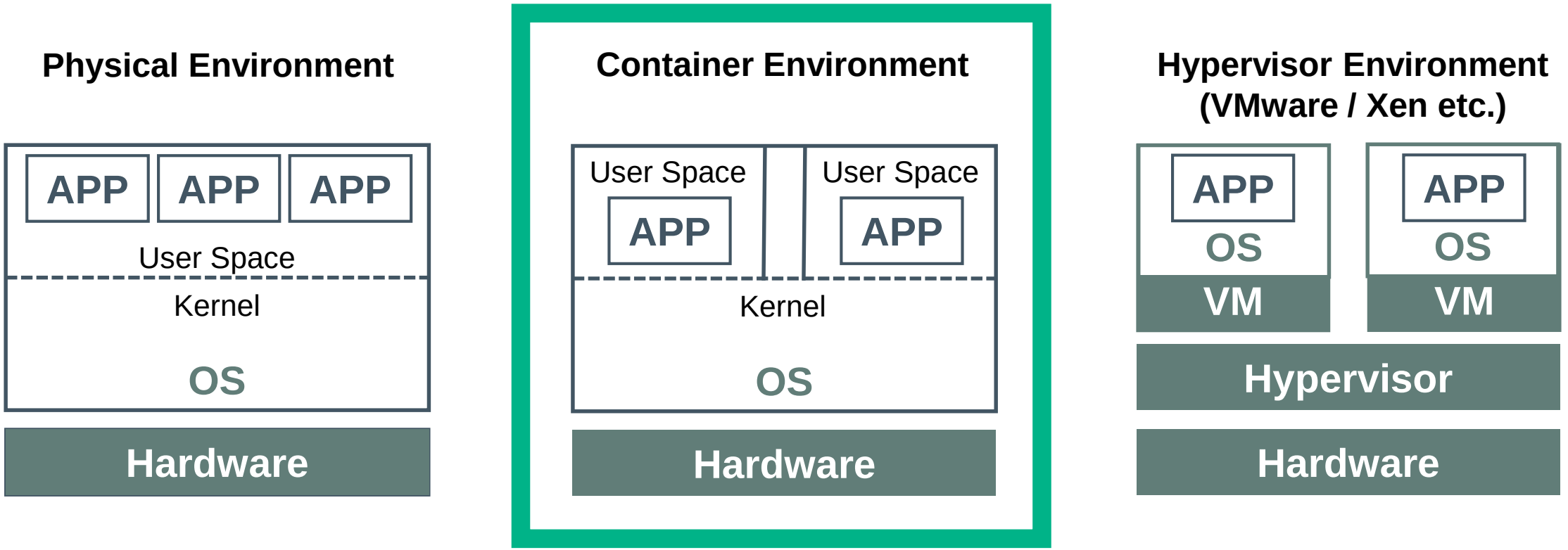
What is Container?

경량화 된 (light-weight) 어플리케이션 구동 환경



- Container would isolate user spaces and provide isolated OS resources by user process which would lead the increase in efficiency of resource consumption (eliminate resource consumption of hypervisor).
- Difference between hypervisor environment and container environment would be the light-weight application runtime environment which does not require the whole operating system for the runtime.

Container는 이미 주류가 되고 있음

Container 기반 어플리케이션 배포 및 운영 사례가 빠르게 증가하고 있음

“….we've seen a quadrupling of container customers, accompanied by a doubling of container consumption in just the first months of 2016 alone. Of that data, more than twenty-five percent are Fortune 500 enterprises ….”

Mark Russinovich CTO

Microsoft

The "lift and shift" containerization of existing traditional applications represents 80% of enterprise use cases.
VM hosting from 2016 to 2020: 80%+ of new enterprise containers will be hosted on VMs.

IDC
Analyze the Future

The biggest challenges to container deployment include persistent storage, networking, security and data management.
The leading reason for not adopting containers is that not enough is yet known about container technologies in order to justify investment.

CONTAINER MARKET ADOPTION
SURVEY
2016

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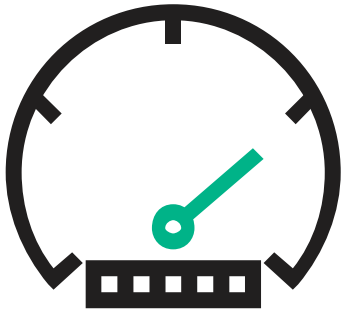
Container 효익

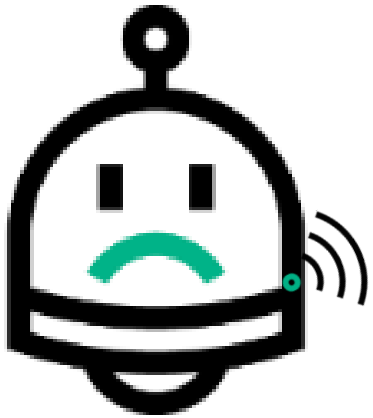
신속한 개발 환경 제공, 표준화, 이식성 및 자원 운영 효율성 등에 걸쳐 효익을 제공하고 있음



EXTREMELY Fast Dev

Deploy workload without OS and other components

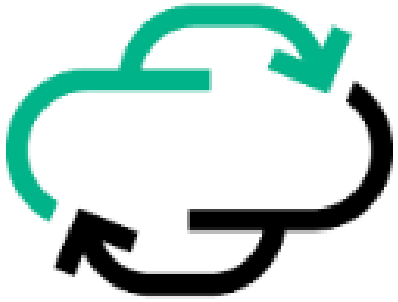
No human intervention is required for the app development



Standardization

Standardize development & operation process

Using the same pull / commit operation



EXTREME Portability

Container would run in environments like Azure, AWS, HOS, VMware, etc…

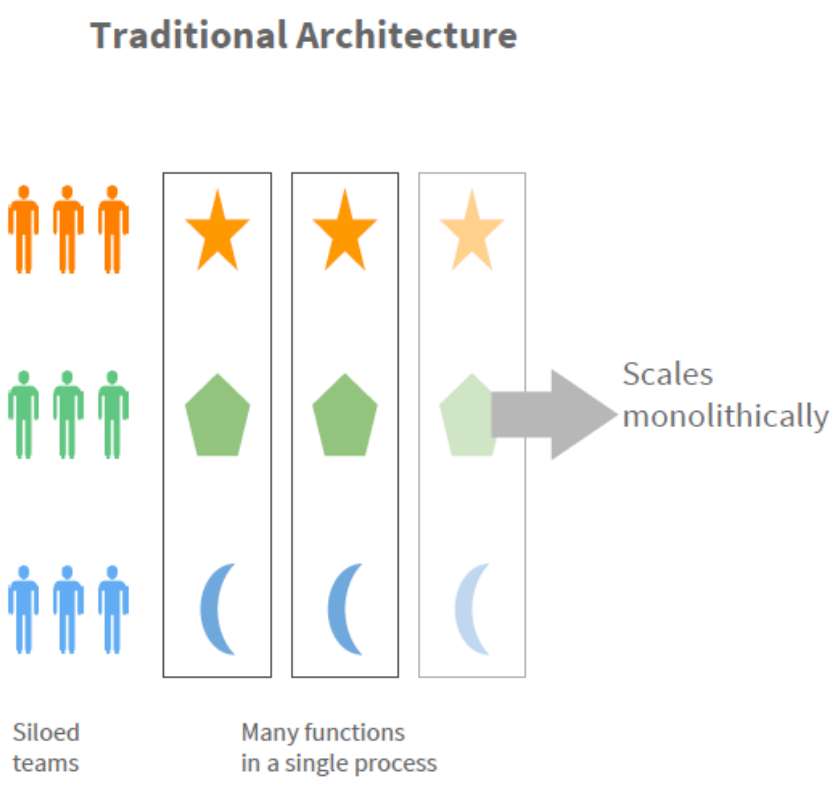
No need to use specific hypervisors or environments

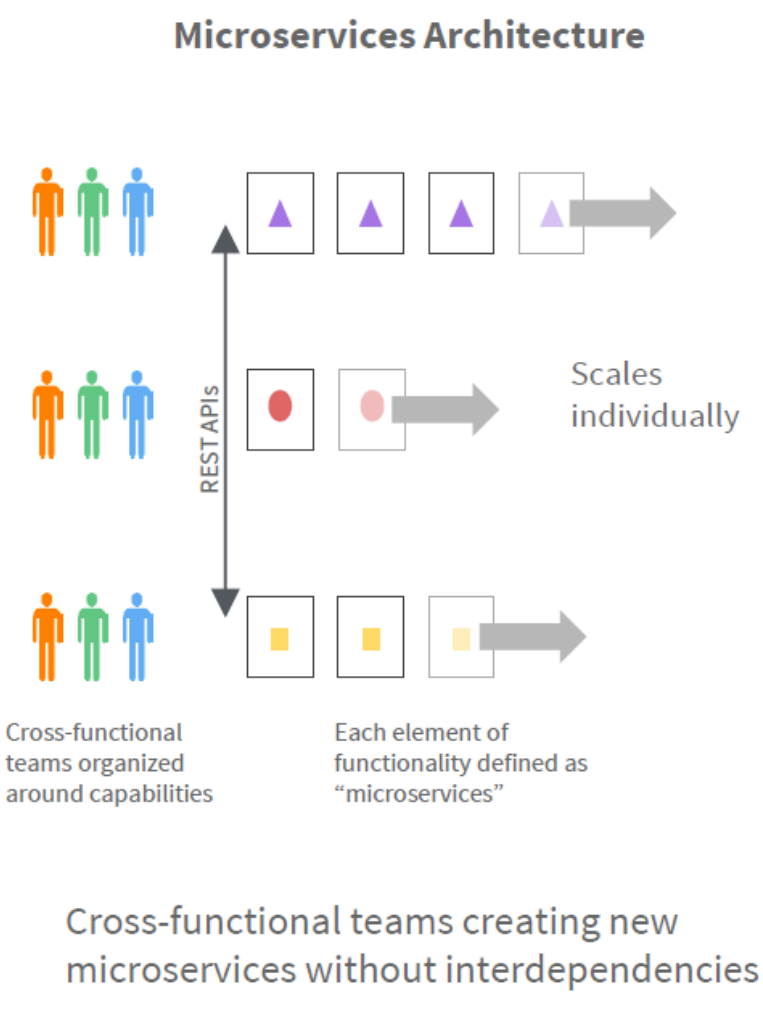
Effective Utilization

Utilize resource fully without hypervisor overhead

Remove all the overhead of hypervisor resource consumption

효익 극대화를 위한 Micro-Service Architecture로의 전환





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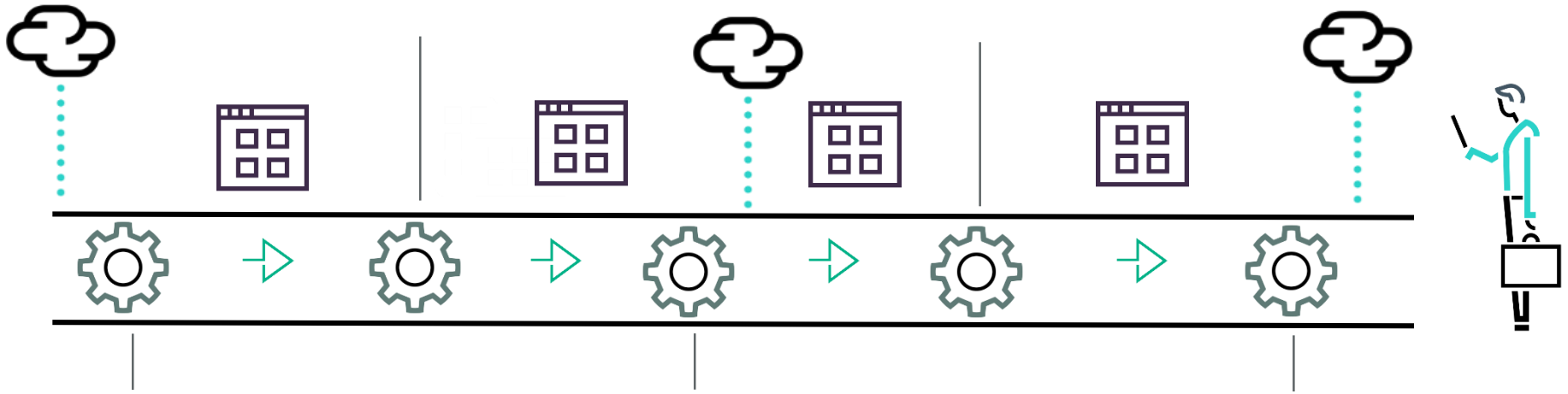
클라우드向 어플리케이션 (Cloud Native App) 개발

보다 유연하고, 통합 및 자동화 된 환경을 제공하여 혁신을 가속

CI/CD 전환 가속

Continuous development integration automates workflows

Open and enterprise ready for portability, innovation and reliability



Development tool flexibility increases velocity and innovation

Multi-cloud self-service environment improves productivity across dev cycle

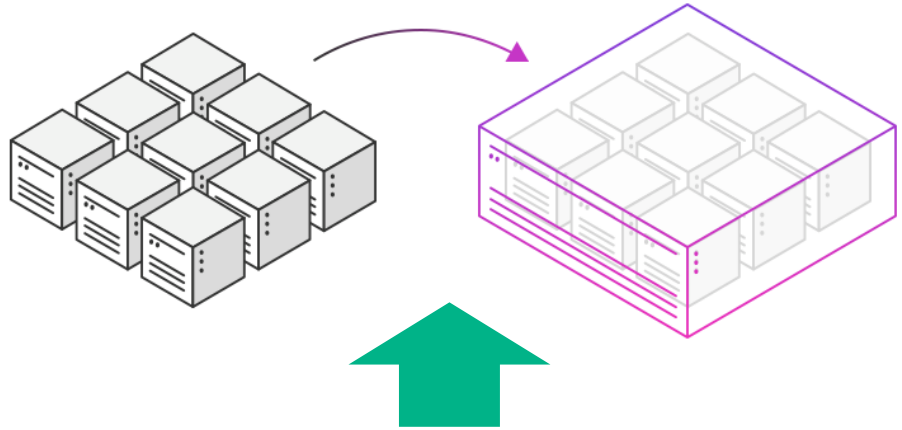
App services connection accelerates delivery of valuable capabilities

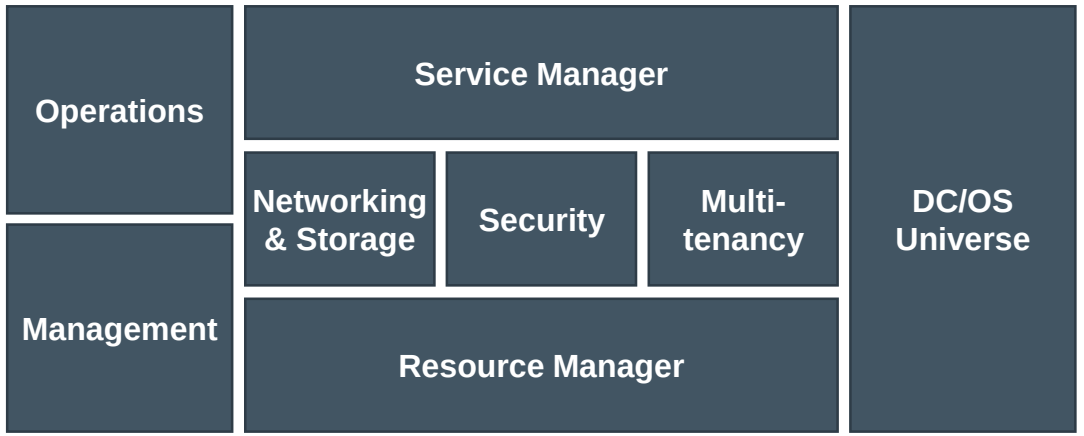
Mesosphere DC/OS 소개

DC/OS는 컨테이너를 위한 오케스트레이션 및 운영 자동화 솔루션임

DC/OS turns your datacenter or cloud into a single giant computer

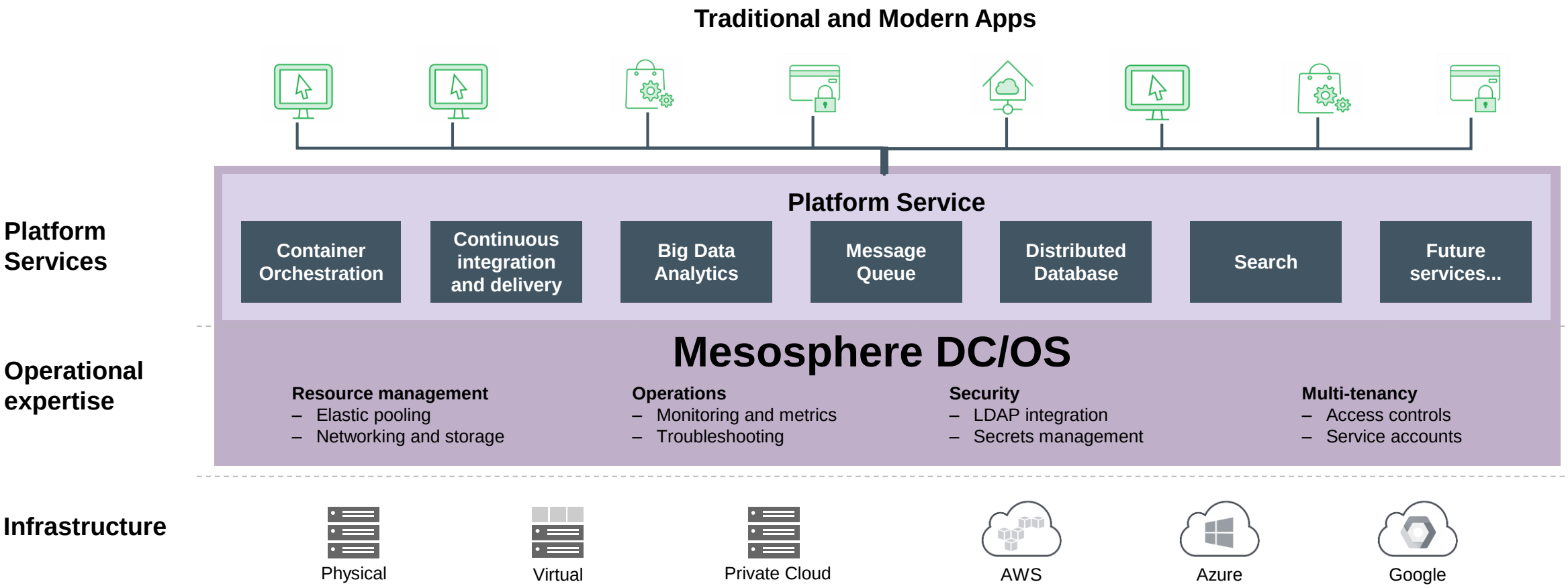
- Operators get out of the pluming of container or virtual machines (pools your infrastructure)
- Keeps long services running in case of failures
- Install or upgrade entire distributed systems with a single command
- No vendor lock-in. DC/OS is commercially packaged solution based on open source Apache Mesos
- Runs on any modern Linux environment (Windows support soon)





Hybrid IT 실현을 위한 Mesosphere DC/OS

서비스를 최적 인프라에서 보다 빨리 개발하고 배포함으로써 Time to Market을 단축할 수 있음



Customer Reference: Autodesk

Autodesk는 DC/OS를 이용하여 자원 효율 개선은 물론 개발 효율 향상과 비용 절감 달성

- Improved Efficiency. We need to improve the overall resource utilization in our data centers to aid in cost reduction as well as fully optimizing the use of our infrastructure.
- Data Center Abstraction. With a hybrid data center strategy, we want to abstract away the underlying data center provider and enable our platform services to be seamlessly deployed and able to run across multiple providers in the same way.
- Developer Efficiency. By standardizing our CI/CD process on top of a container-based infrastructure we felt we could more rapidly deploy updates and significantly simplify the developer experience for building services.

- **66% reduction** in AWS Instances
- **Cost improvements up to 57%**
- **40 sec** time to deploy a new build with zero downtime
- **3 min** time to stand up a new region
- **100%** uptime

Global Semiconductor Company

컨테이너 기반 개발 환경을 통해 “Do More With Less”을 실현함

Customer Requirements

Background

- The customer has been running hypervisor-based test environment for the software, which required high operational cost and continuous server addition
- The customer looked for a solution which can innovate their existing environment to be more efficient and cost-effective

Requirement

- To be compatible with the current test tools and processes
- To run Windows-based software while most of Docker solution only support Linux OS
- To reduce operational cost and to support high performance

Strategy and Scope

Strategy

- HPE introduced Docker and PaaS solution thru seminars, meetings and workshops
- TSC/HOPS demonstrated the Docker and Mesosphere expertise in collaboration with GTM and ISS sales
- HPE supported the customer to prove Docker environment thru the dedicated POC

Scope

- To set up a new Docker cluster which should be operated with existing hypervisor-based cluster
- To configure the new Docker cluster to run Docker containers
- To implement Mesosphere to orchestrate Docker containers
- To integrate Docker environment with the existing test environment so that the customer can operate both of hypervisor and Docker seamlessly

Result

- HPE was the sole vendor which can implement Docker environment with Mesosphere DC/OS which can run Windows-based software in cost-effective and high performance environment
- With the new Docker environment, TCO reduction was estimated to be 30%
- Test capacity was improved to 300%.
- Test performance was increased to around 2x
- The Docker environment could support their requirement of “do more with less”

트랜스포메이션을 위한 다음 단계

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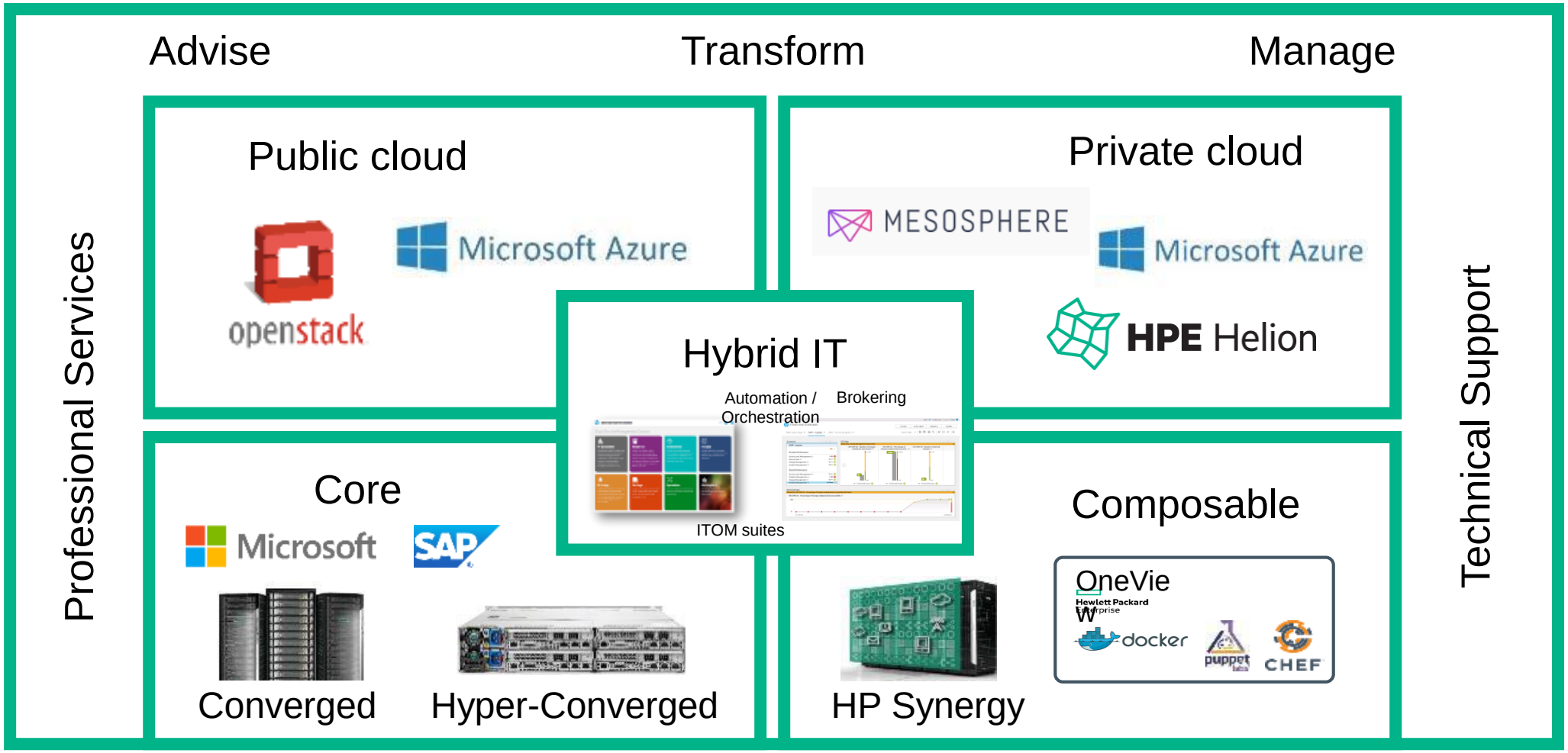
Hybrid IT 실현을 위한 End-to-End 솔루션 제공

Right Mix 전략 수립부터 다양한 platform에 걸친 구축 및 기술 지원의 솔루션 제공



Mesosphere is one of HPE's strategic partners

- Hewlett Packard Enterprise HPE and Microsoft MSFT contributed to a $73.5 million funding round for data center software startup Mesosphere
- Mesosphere now has $126 million in total funding. The company declined to disclose its valuation.
- The startup's technology can be thought of as a data center mother brain that automatically distributes the appropriate resources and data to power a software application, so IT staff doesn't have to worry about tweaking servers or other gear behind the scenes.

Why HPE and Mesosphere?

하이브리드 클라우드 기반 디지털 트랜스포메이션을 위한 전략, 구축 및 운영 지원을 제공함

MESOSPHERE

Proven DC/OS Platform

- Container orchestration and data services operations
- Production-proven at scale in mission-critical datacenters
- Easy to install and run

Advisory

어플리케이션 개발 수명주기 관리를 위한 전략 수립

Build / Transform

컨테이너 기반 어플리케이션 개발 플랫폼 통합 구축

Optimize

새로운 플랫폼 적용, 관리 및 운영 지원

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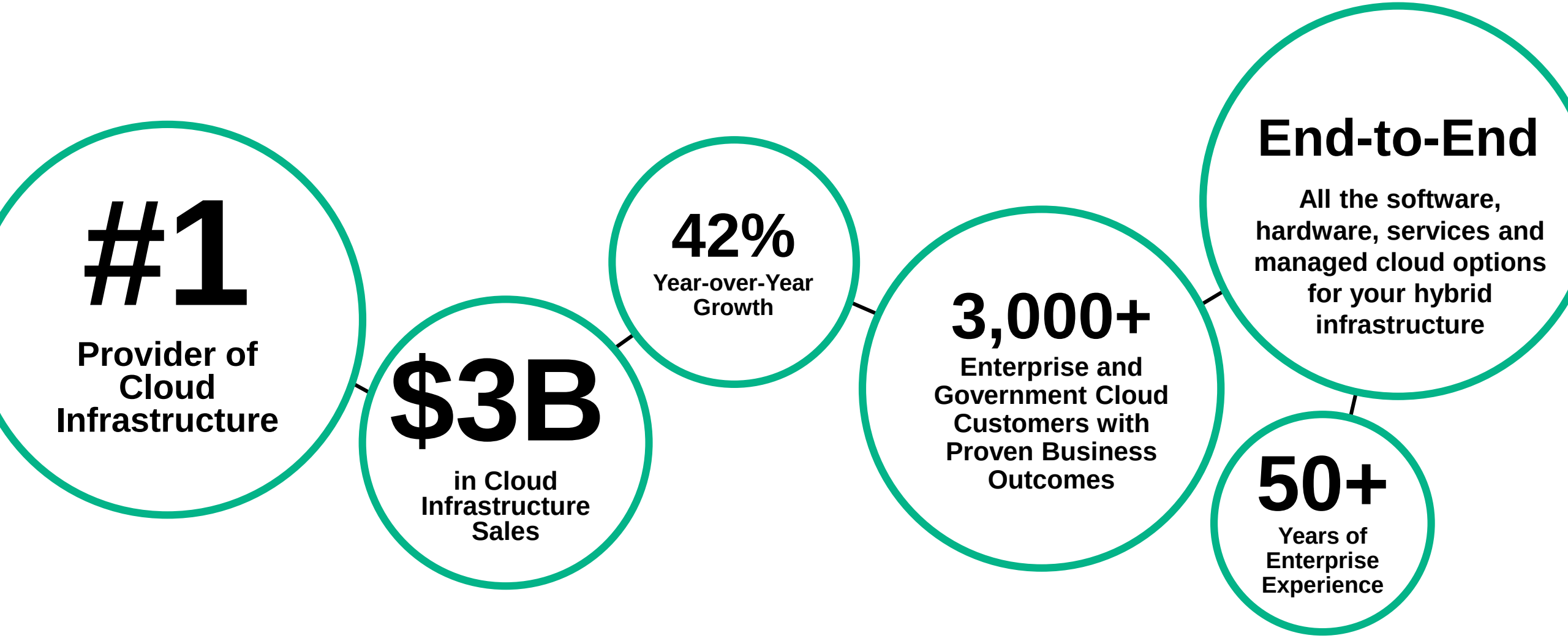
HPE는 Hybrid IT 분야의 글로벌 리더입니다



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Thank you

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