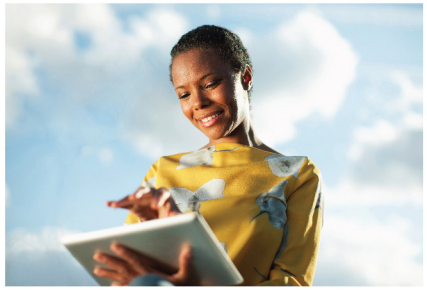
APPS
BIG DATA
CLOUD
CYBER
MOBILITY



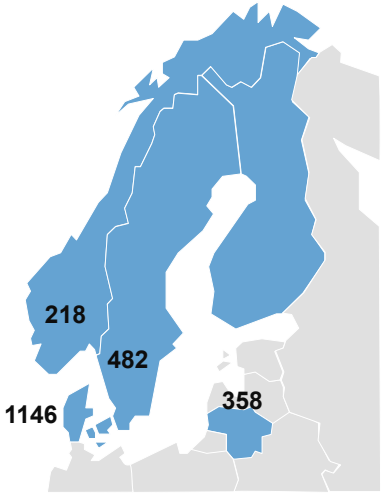


Leveraging the full potential of automation

Hans Jayatissa
CTO, CSC Nordics & Baltics Region
August 27, 2015

DELIVERING INNOVATION TOGETHER

CSC in the Nordics & Baltic



- Copenhagen
- Aarhus

- Oslo
- Bergen

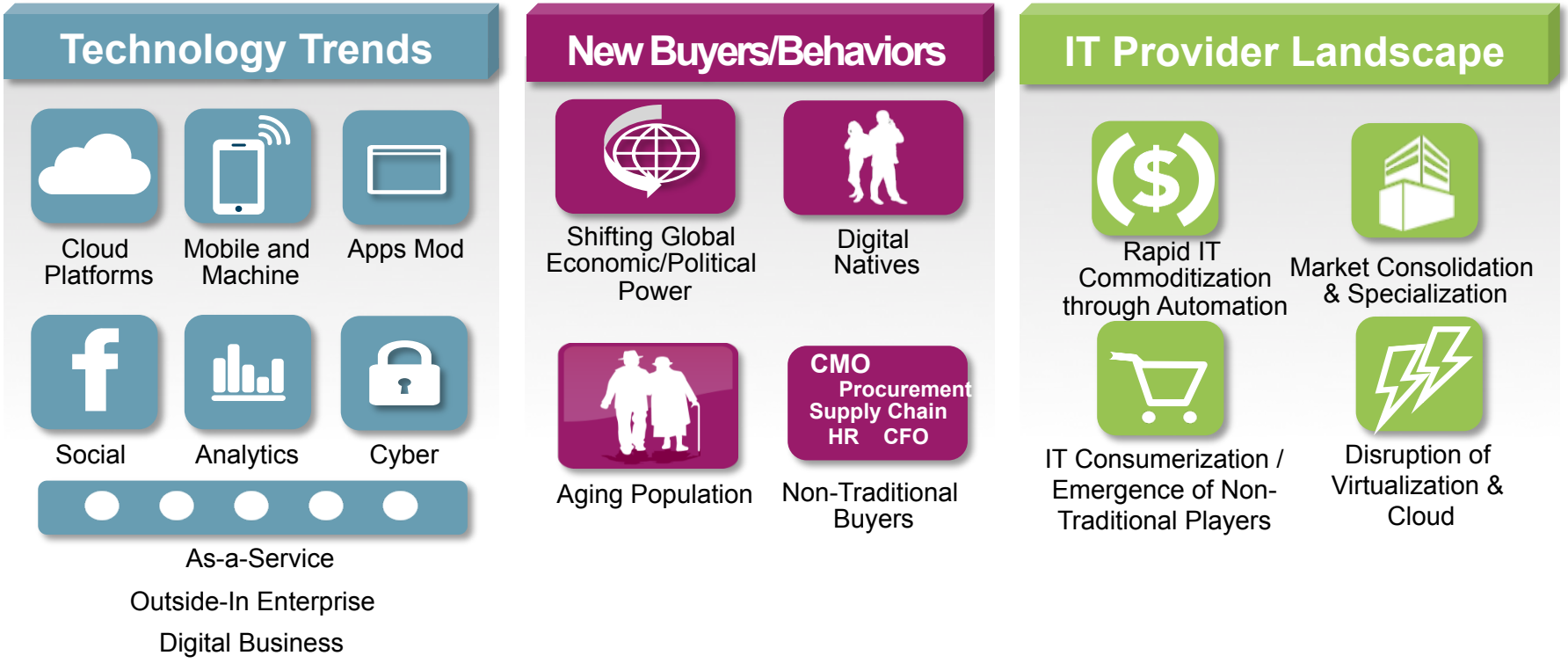
- Stockholm
- Västerås
- Linköping
- Karlskrona
- Göteborg
- Malmö

- Vilnius

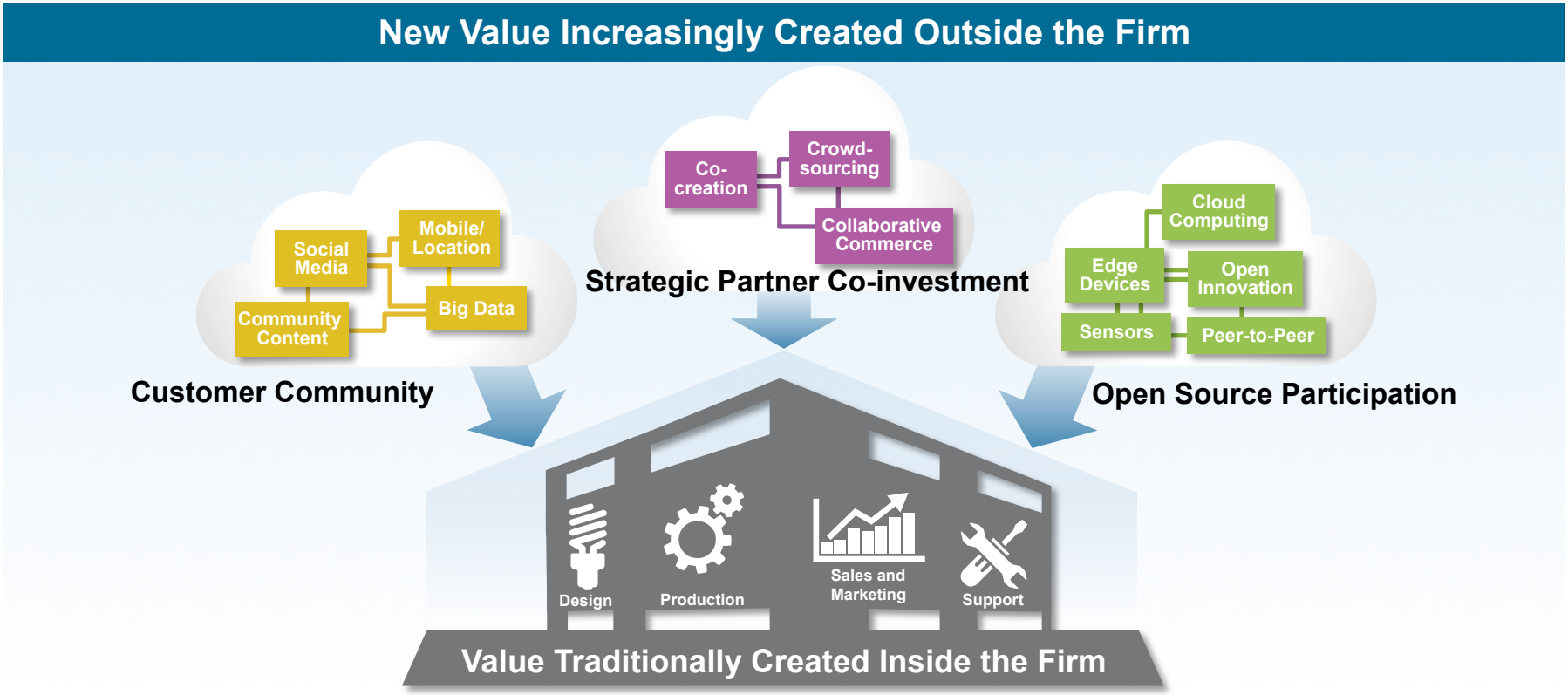
CSC has employees in Denmark, Norway, Sweden, and Lithuania

We have 13 offices and 2,200 team members across the region in 4 countries and 700+ in India

With Significant Market Shifts Underway, Change Is Required



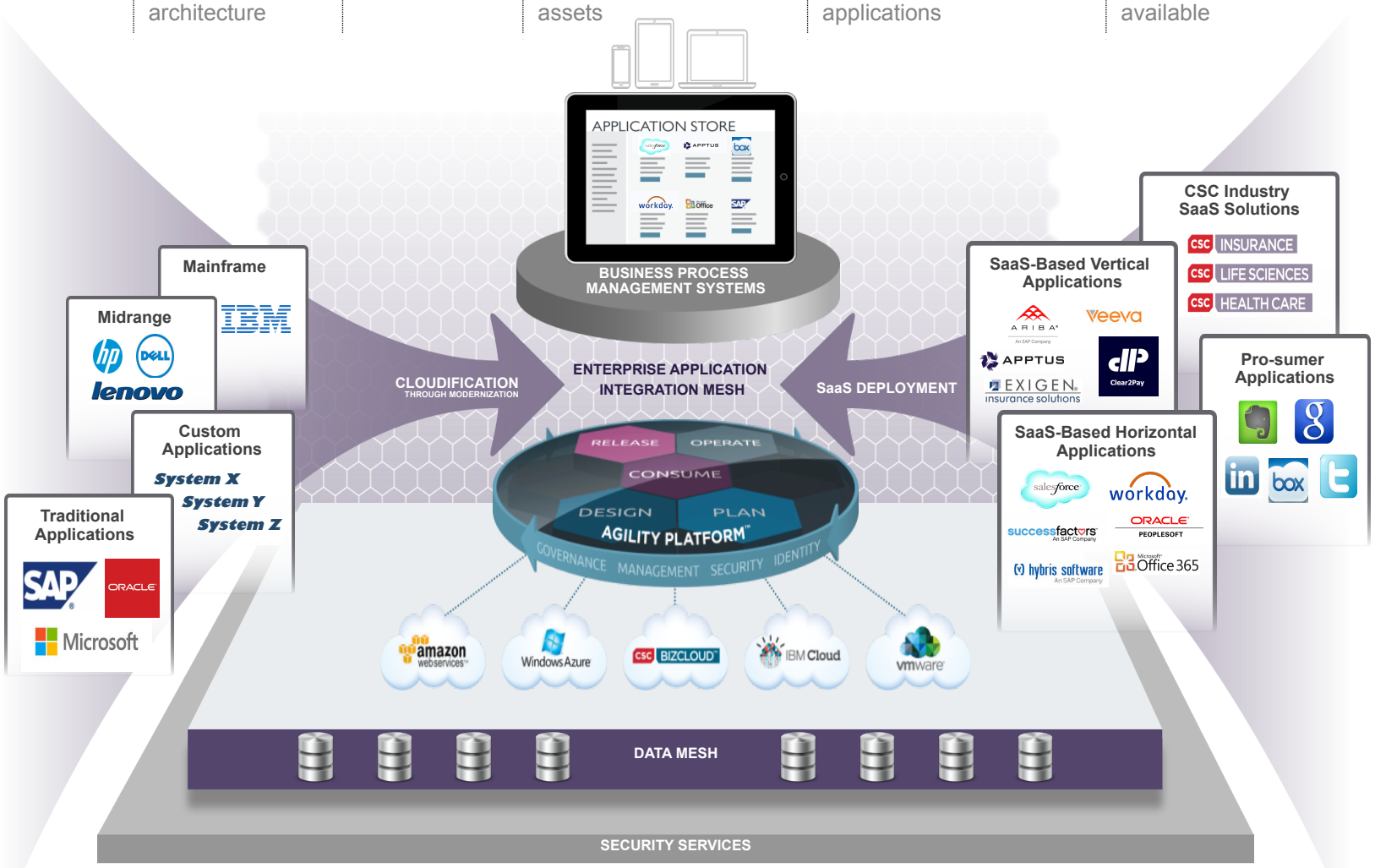
Innovation Is Moving Outside the Firm – the Ecosystem Effect



Forces for Changes in IT Sourcing

The Service-Enabled Enterprise

Customer Benefits	Efficient, ubiquitous cloud architecture	Match cost to usage	Better visibility on enterprise technology assets	Faster innovation cycles enabled through aaS applications	Immediate deployment options available



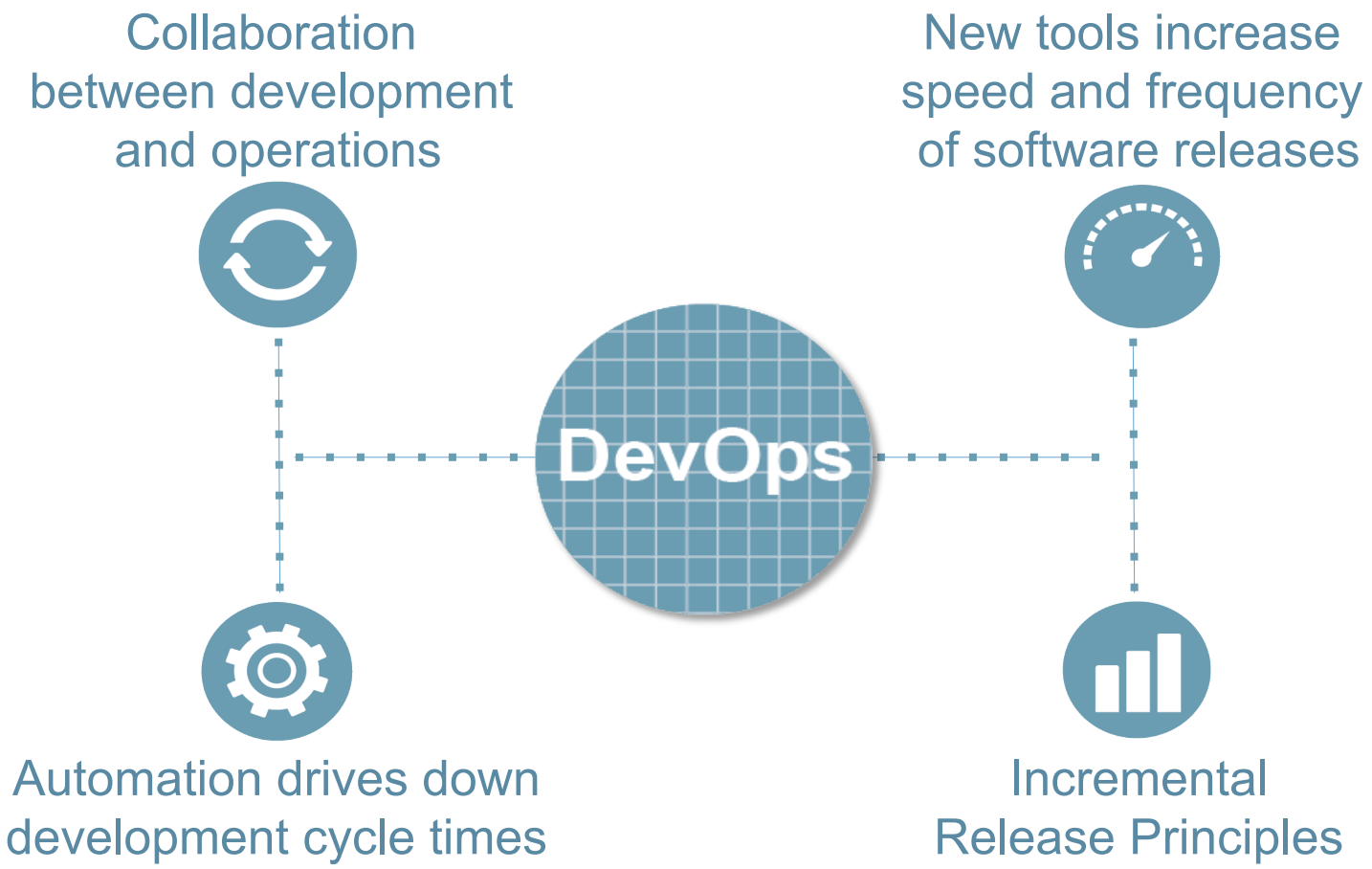
Transforming Applications

Restack IT

Develop

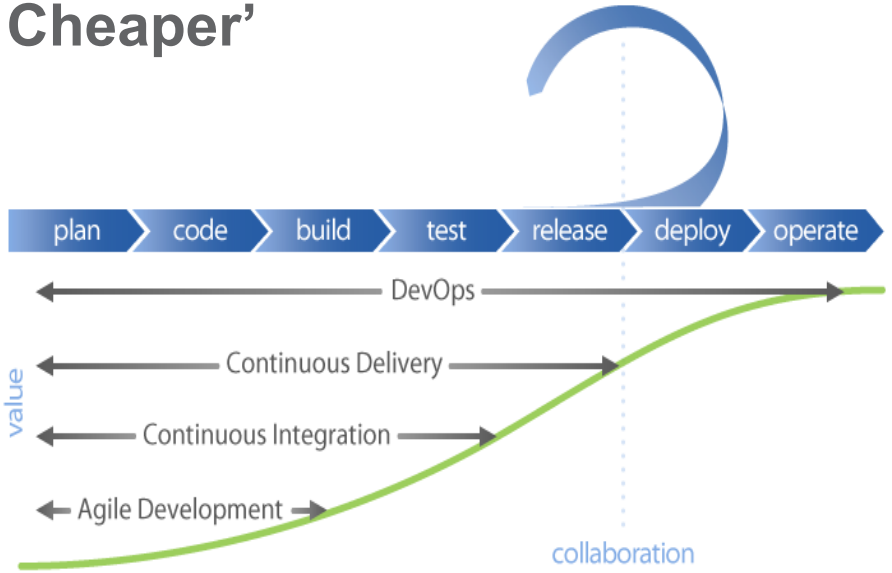
Distribute and Consume

A New Way to Develop Apps

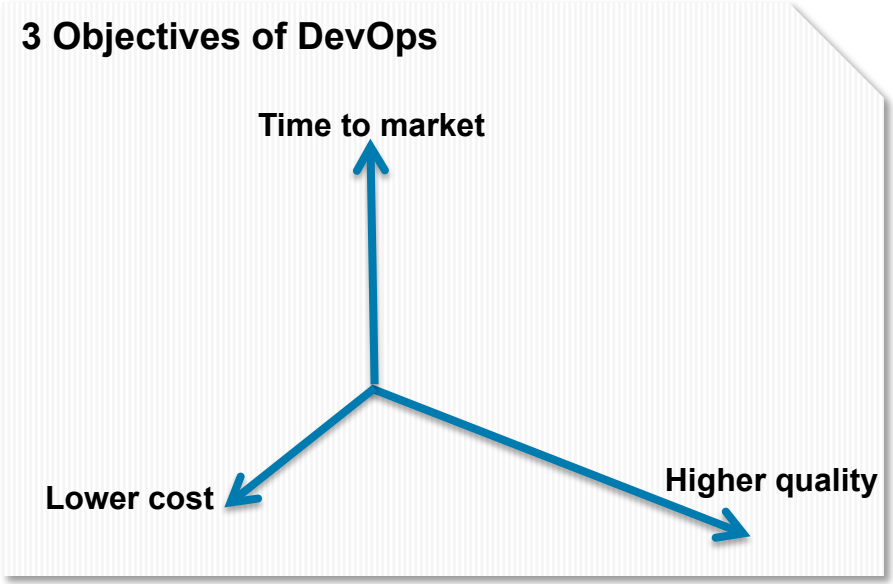


DevOps Benefits: 'Faster, Better, Cheaper'

- Increased collaboration across competency areas (Dev, QA, Ops)
- Increased Automation, limitation of errors, time for added value tasks
- Increased frequency of testing and deployed software / services
- IT Operations can deploy multiple technologies ('press button')
- Improvement in quality of applications deployed and time-to-market speed



Business value derived from aligning and strengthening Dev & Ops bond through connected ALM & ITSM (closing lifecycle gap).



DevOps Maturity Model

	Operating Model	Continuous Integration	Continuous Testing	Continuous Deployment	Continuous Provisionning
Level 5 ***Optimized***	•Dev & Ops are part of multidisciplinary delivery team and share responsibilities •Time-to-market and ROI is benchmarked	•Continuous integration, fully automated: every day the system's components are integrated, analyzed, measured and tested together	•Tests are fully automated • Continuous testing + efficient environment provisioning reduce test cycle and failures impacts	•Continuous end-to-end deployment implemented •Tools used to monitor deployment performance	•Continuous and automated provisioning with self service portal implemented • Virtualized and as a service infrastructure
Level 4 ***Measured***	•Dev & Ops collaborate to accelerate delivery cycle, sharing knowledge and feedbacks •KPIs measure delivery process efficiency	• Integration tests are fully automated and performed as often as possible to detect bugs •Everyone commits to the baseline every day	•Test driven deployment (TDD) and automation is the rule •Load testing is integrated early in the dev. cycle	•One single, repeatable deployment process defined and tested over the multiple environments •Rollback is automated	•Environment can be created and torn down by a push of the button (end-to-end provisioning approach) •Operating system is virtualized
Level 3 ***Defined***	• Dev & Ops are striving to ensure end-to-end delivery process and limit non-added value task • Workflows and tools are integrated	•The integration environment is used on a regular basis to develop, test and deploy •Integration tests are mainly automated	•Automated tests are generalized to the downstream phases • Tests design + execution early in the delivery cycle (Dev-Test-Ops approach)	•Roll out of applications is automated (performed by a 'push button') •Deployment is repeatable and automatically executed	• Environments are standardized • Several tools are used to provision and configure an environment
Level 2 ***Managed***	•Dev & Ops work together when it is required •Delivery process interfaces are managed (eg: release notes)	•An integration env. (clone of production env.) is available to test all the components of the release at least once together before the roll out	•Automated tests are initiated with a focus on unit testing •Test phases anticipated in the project plan	•Effort made to automate and define deployment standards across the delivery phases •Self service deployment to development and test	• Scripted installations per component for each server • Request and configuration management process is initialized
Level 1 ***Initial***	• Organization is siloed ; Dev & Ops objectives and practices strongly differ •Operations are involved at the end of the projects / deliveries	•Integration tests are lately and partially done •Lately and partially integrated in the pre-production environment	•Tests require mainly manual activities •Tests partially written and done at the end of the project (bottleneck effects)	•Deployments are realized manually or through separate scripts for installations of applications and DB per environments	•Manual installation and configuration of environments with no standards / patterns •Request Management process is not normalized

DevOps Strategies

Operating Model Transformation

- **Manage cultural shift** aligning Dev & Ops practices (ALM+ITSM) in an AGILE mindset
- **Set up end-to-end continuous delivery** integrating Dev & Ops processes and tooling
- **Mix resources from Dev & Ops** in new organizational schemes (central release team)
- Sustain collaboration and continuous improvement sharing knowledge and feedback
- Align governance and metrics to measure delivery and time-to-market efficiency

Continuous Delivery

Continuous integration

Continuous testing

Continuous Deployment

Review delivery cycle to accelerate time-to-market with no compromise on Software Quality through **automated testing and deployment industrialization.**

- Implement an integration environment (clone of prod.) to test components together
- Commit and test package deployment on a regular basis to detect bugs early
- Automate integration testing to ensure deployment integrity and limit cost / efforts

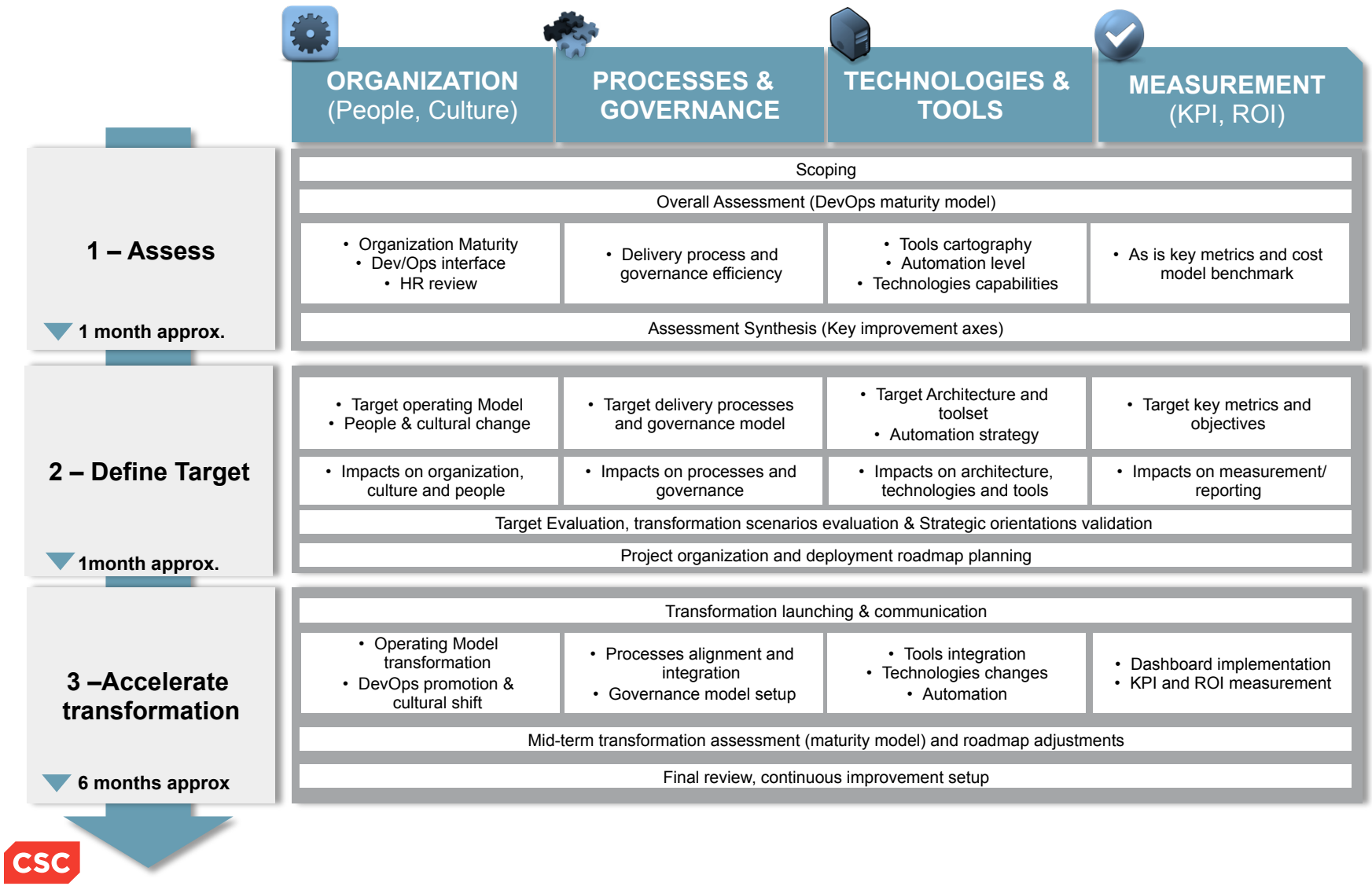
- **Promote Test Driven Development** to accelerate test cycle (Dev-test-Ops approach)
- Integrate testing design + execution (including load test) early in the dev. cycle
- **Develop testing automation** sustained with efficient environments provisioning

- Implement end-to-end continuous deployment : single, secured, tested and repeatable process over the multiple environments
- Automate the deployments (“push button”) and monitor the performance

Continuous provisioning

- **Define standards for infrastructure and environments provisioning acceleration** (virtualized and as a service infrastructure approach)
- Automate the components provisioning, installation, configuration and administration
- Implement on demand portal aligned with capacity and costs measurement

An Approach to Implement DevOps



DevOps Influences the Development Sourcing Strategy

Enhanced Efficiency

DevOps enables everybody in the Software Development Lifecycle to become more efficient

Industry Focus

Automation of all repetitive and/or standardized tasks means more focus on architectural skills and industry knowledge in the development team

Breaks Silos

DevOps breaks down the role silos (e.g. no tester, deployment personel, or system integrators – but an automation team)

Consequently

- In projects with high business/customer interaction DevOps will often be a **better alternative** than offshoring the work
- In large projects DevOps and Offshore **supplement** each other

4 Key Take Aways

1

Outside-in Value

The next-generation technologies (3rd platform, Nexus of Forces) means that value is increasingly generated outside the firm.

2

Define Unique Business Value Propositions

Bespoke IT e.g. software development should only happen in the areas where it provides a unique business advantage/differentiation.

3

Increase Quality and Agility

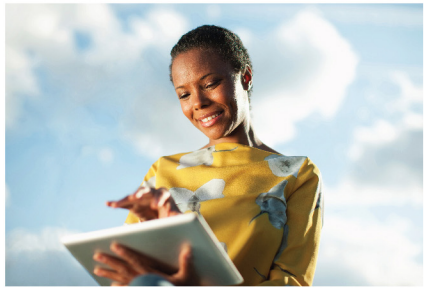
Use DevOps in the Software Development Life Cycle to increase quality, time-to-market and business agility through automation and change of processes

4

Automation and Offshoring

DevOps will often be a better alternative than offshoring on small and medium business critical applications – and a supplement on large applications.





Thank you

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