

Testing Trends

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Scope

- Agile
- Internet of Things
- Risk-Based Testing & Standards
- Crowd Testing (& Localization)
- Offshore Testing
- Gamification

Agile & Testing – Still Some Way to Go

- **World Quality Report 2014-15**
 - 93% use agile for some projects in some way, but...
 - 36% of testing is done in agile projects
 - 55% struggling with test automation
 - 61% feel their agile test approach is wrong
 - Majority still use test professionals
 - 35% don't have enough testing skills in their teams
- **Continuing time to market pressures suggest agile**
- **Agile co-location needs are making offshoring less likely**
- **Shortened test times increase demand for risk-based testing**

Cherry Picking the Best Agile Practices

- **Continuous Integration**
 - fast feedback on check-in
- **Customer Engagement**
 - talk to the customer – all the time!
- **100% Unit Regression Testing**
 - know if you break something
- **Test-driven Development**
 - assured 100% coverage
- **Continuous deployment**
 - try it for production in DevOps

**THESE TWO ARE
'MUST-HAVES'**



Evolution of the Internet of Things (IoT)

**2000
WWW**



~360 Million Users

Connected People

**2015
Mobile**



~10 Billion Phones

**Connected People
& Locations**

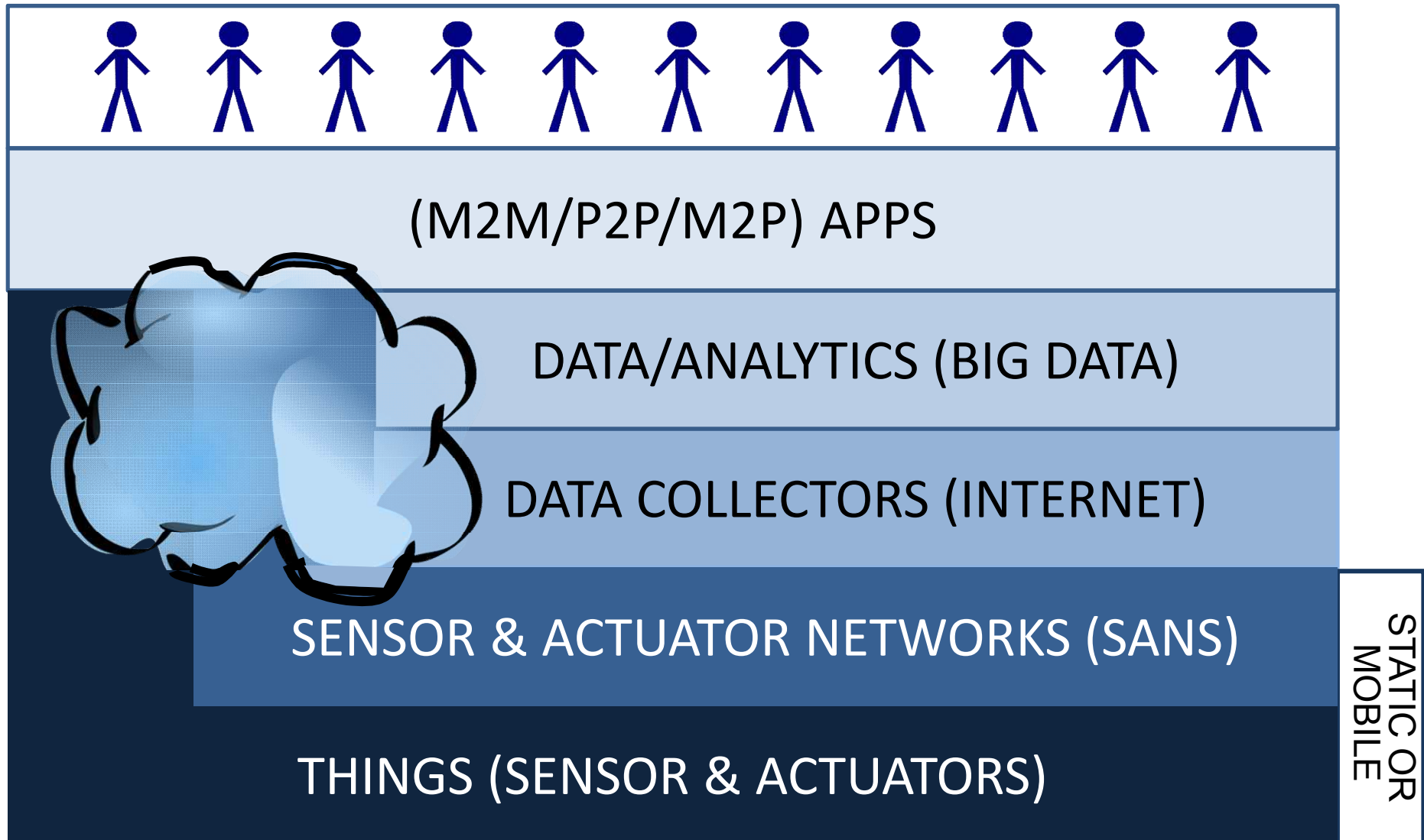
**2020
Internet of Things**



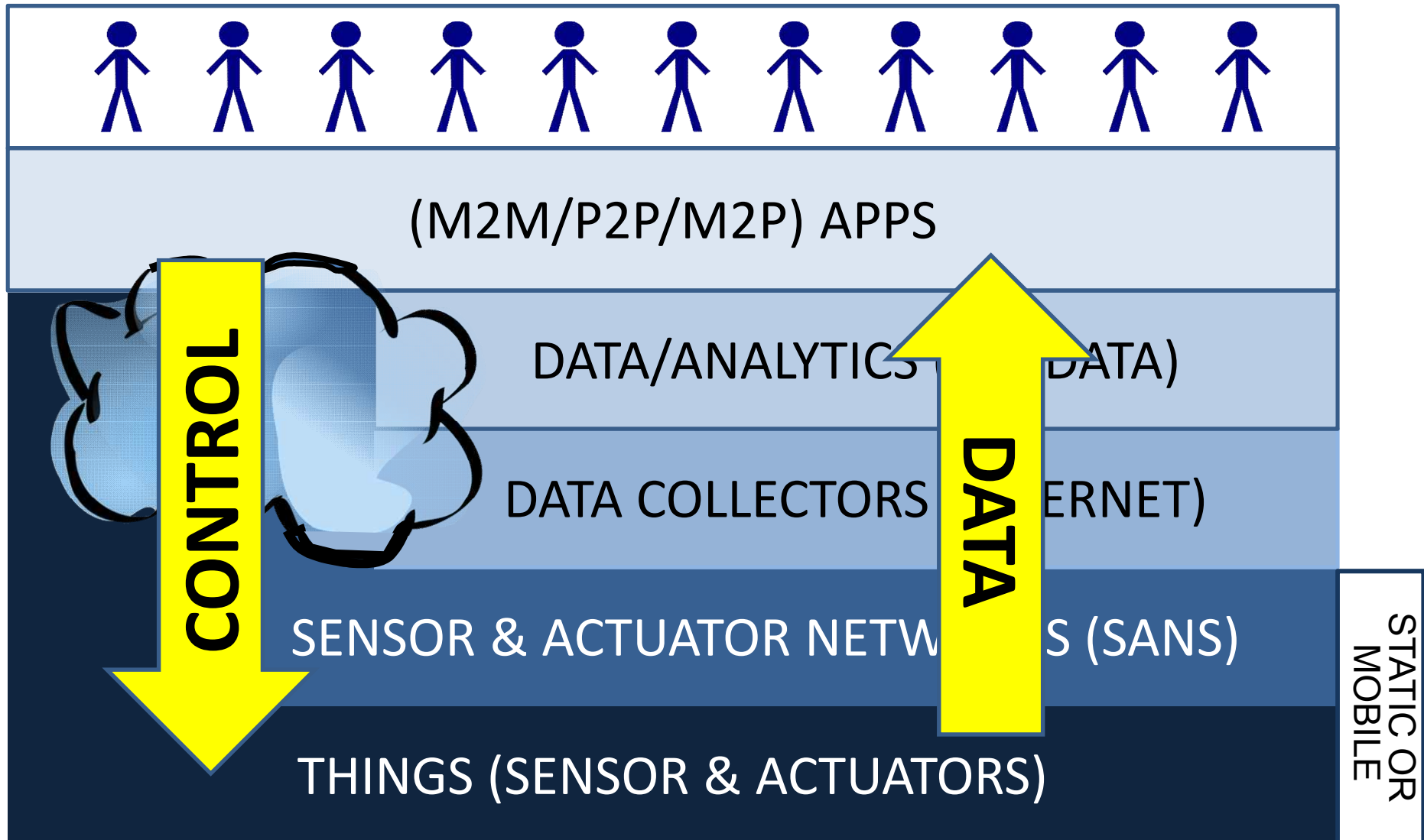
**~212 Billion 'Things'
(up to US\$5 Trillion)**

Connected Everything

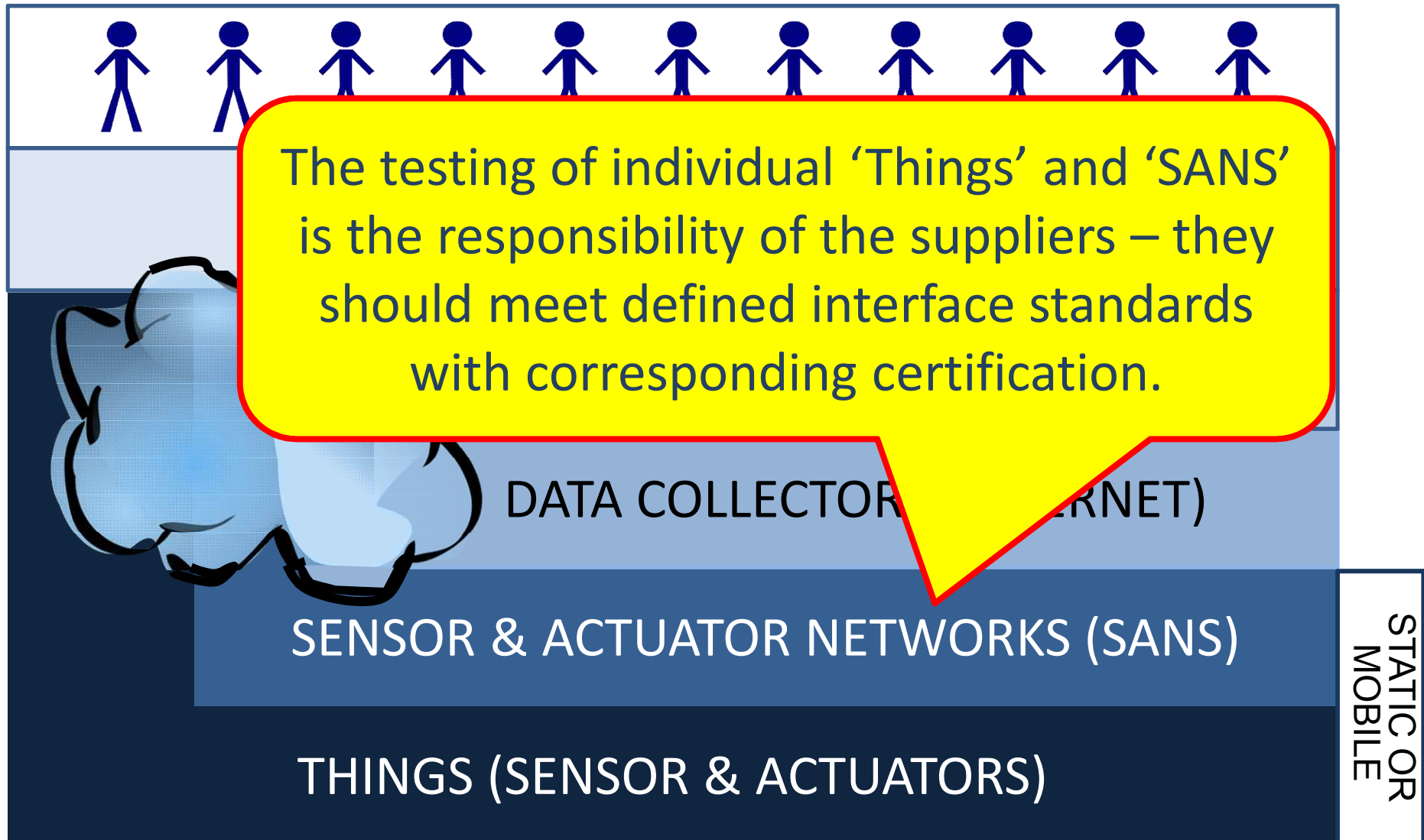
Internet of Things – A Simple Model



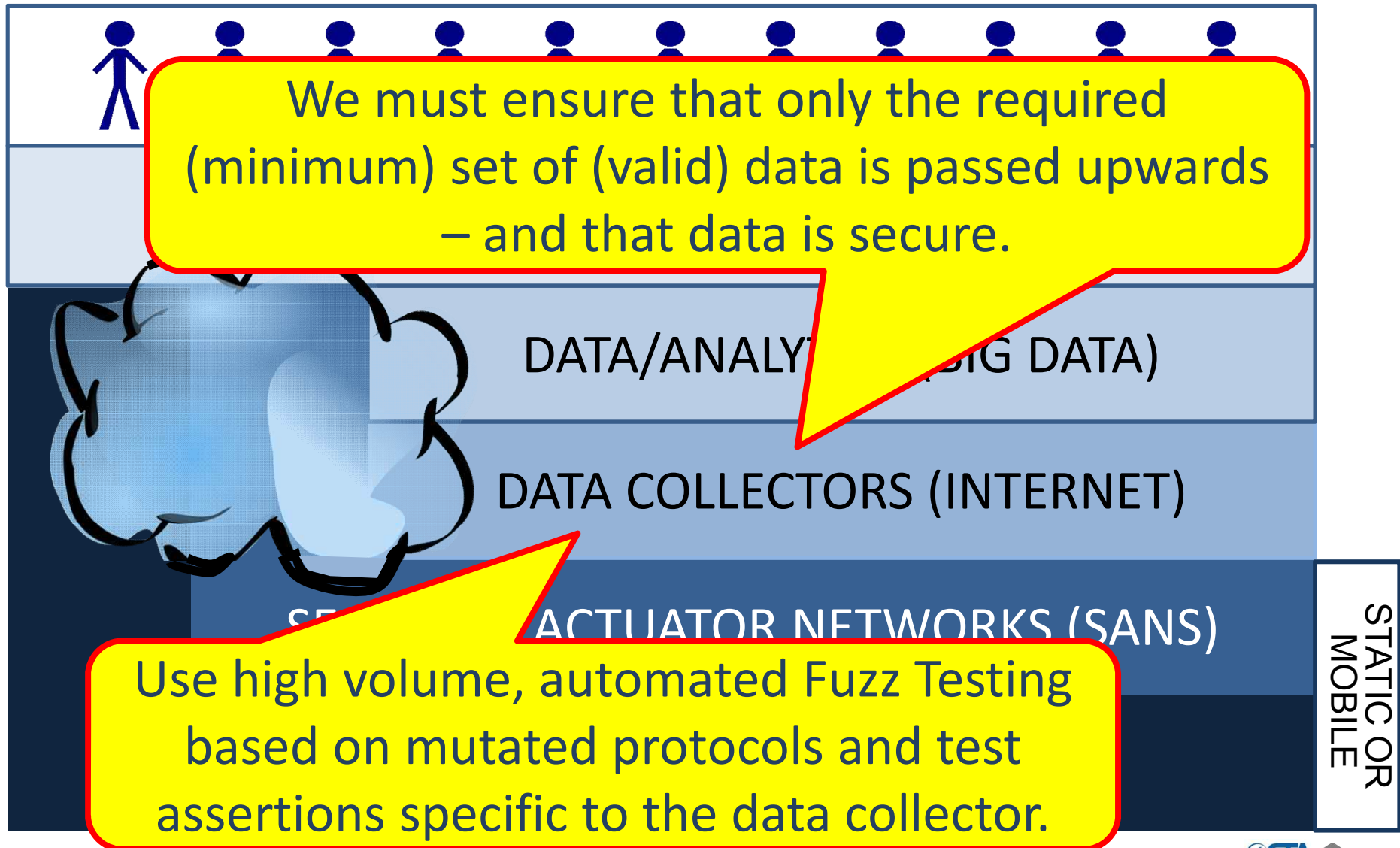
Internet of Things – Data & Control



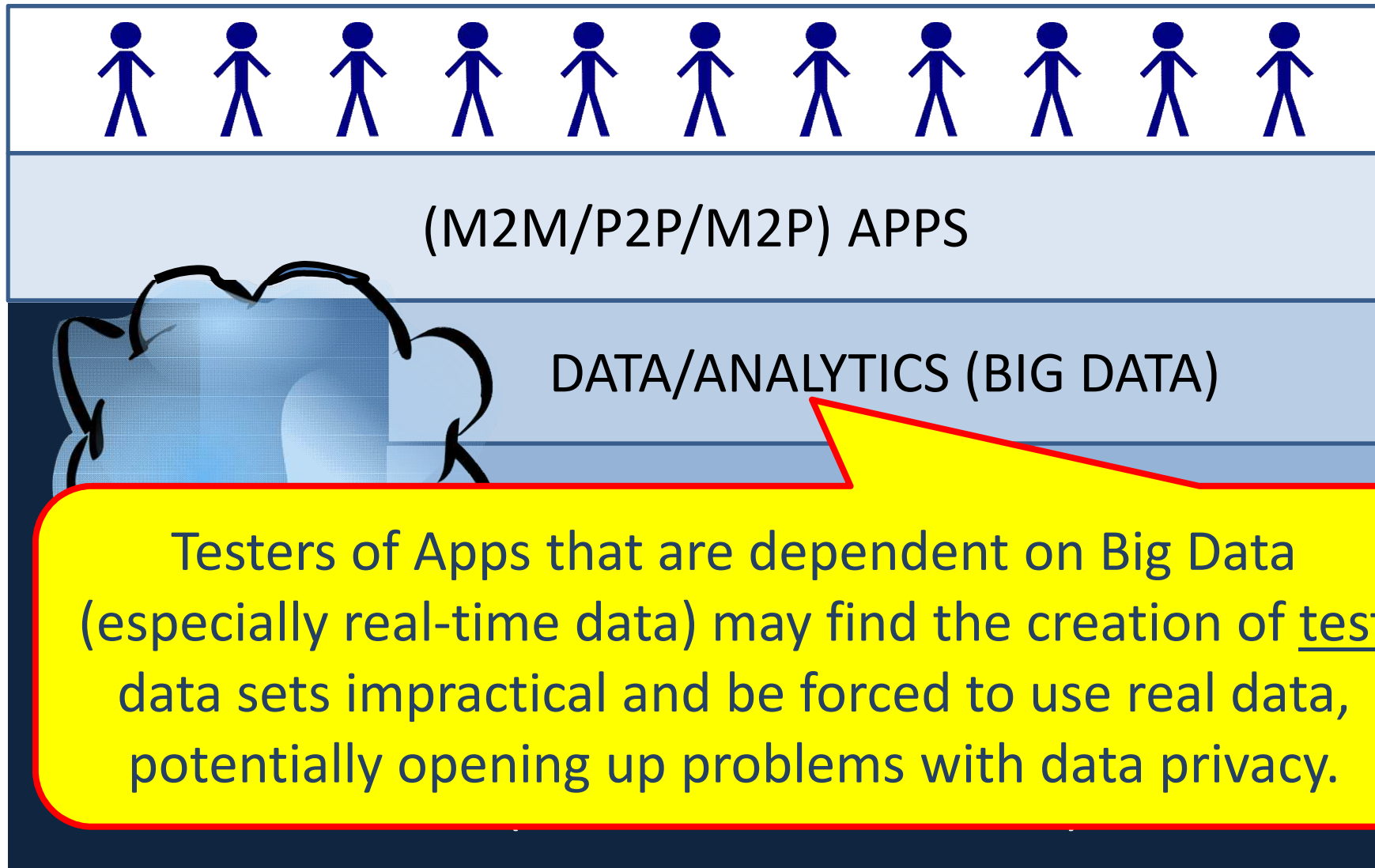
Internet of Things – Certified Things & SANS



Internet of Things – Fuzz Testing



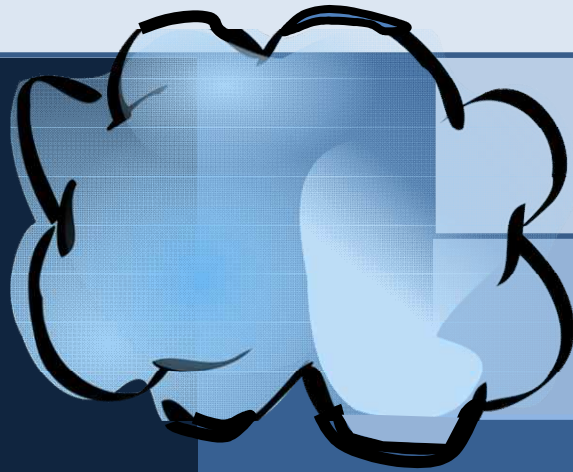
Big Data – Test Data = Real Data?



Internet of Things – Analytics & MBT

For complex Apps based on data analytics we will need to build system models as the basis of model-based testing and require Specialist Testers to define testable risk profiles based on them.

(M2M/P2P/M2



DATA/ANALYTICS (BIG DATA)

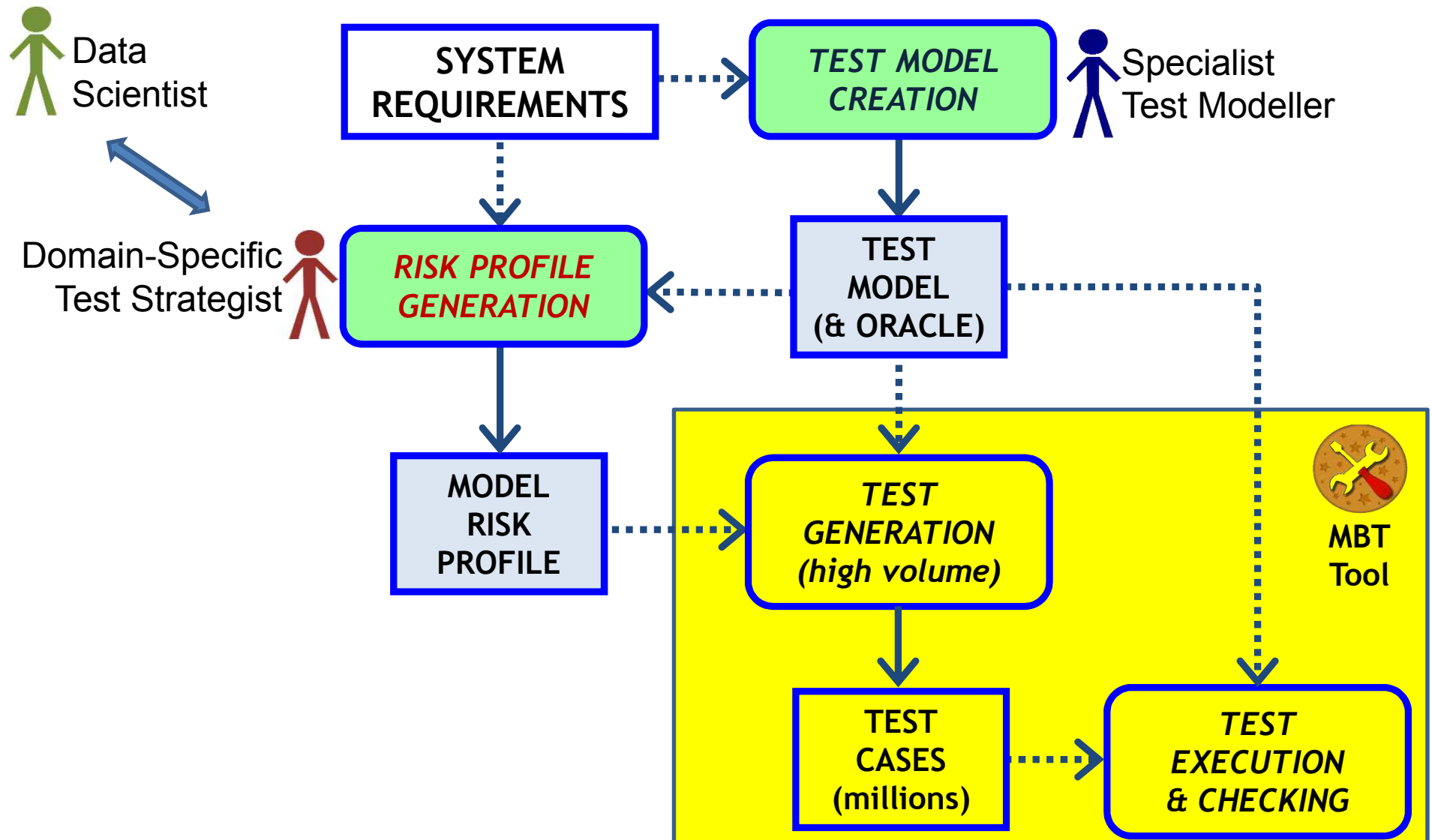
DATA COLLECTORS (INTERNET)

SENSOR & ACTUATOR NETWORKS (SANS)

THINGS (SENSOR & ACTUATORS)

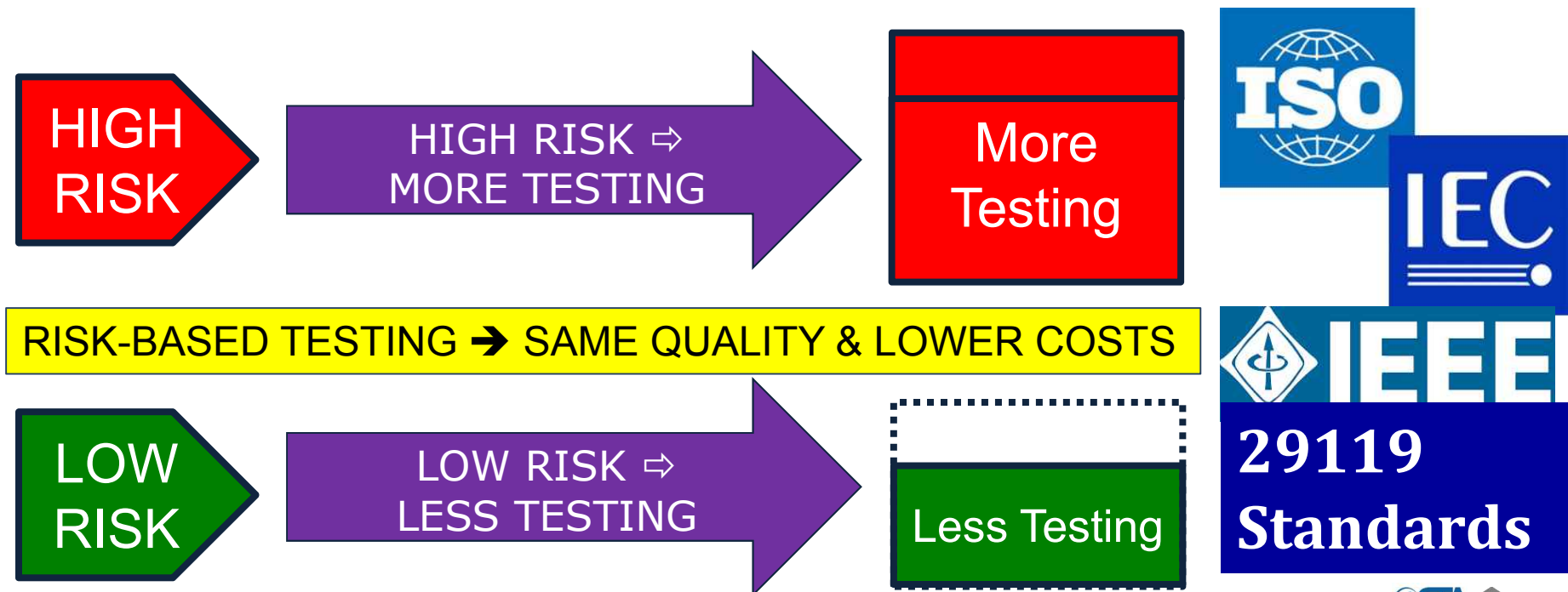
STATIC OR
MOBILE

Risk-Based Model-Based Testing for Big Data

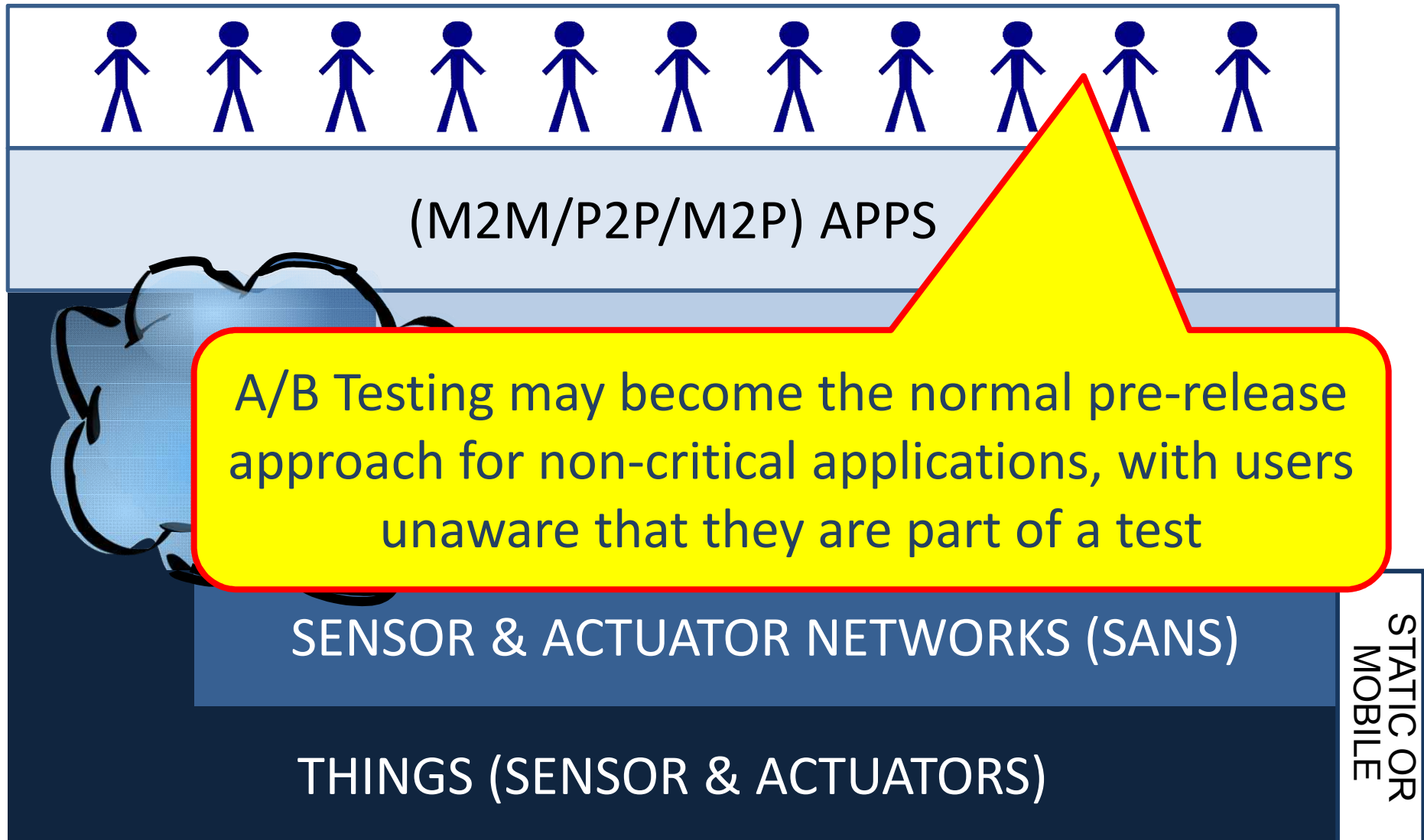


Risk-Based Testing (and Standards)

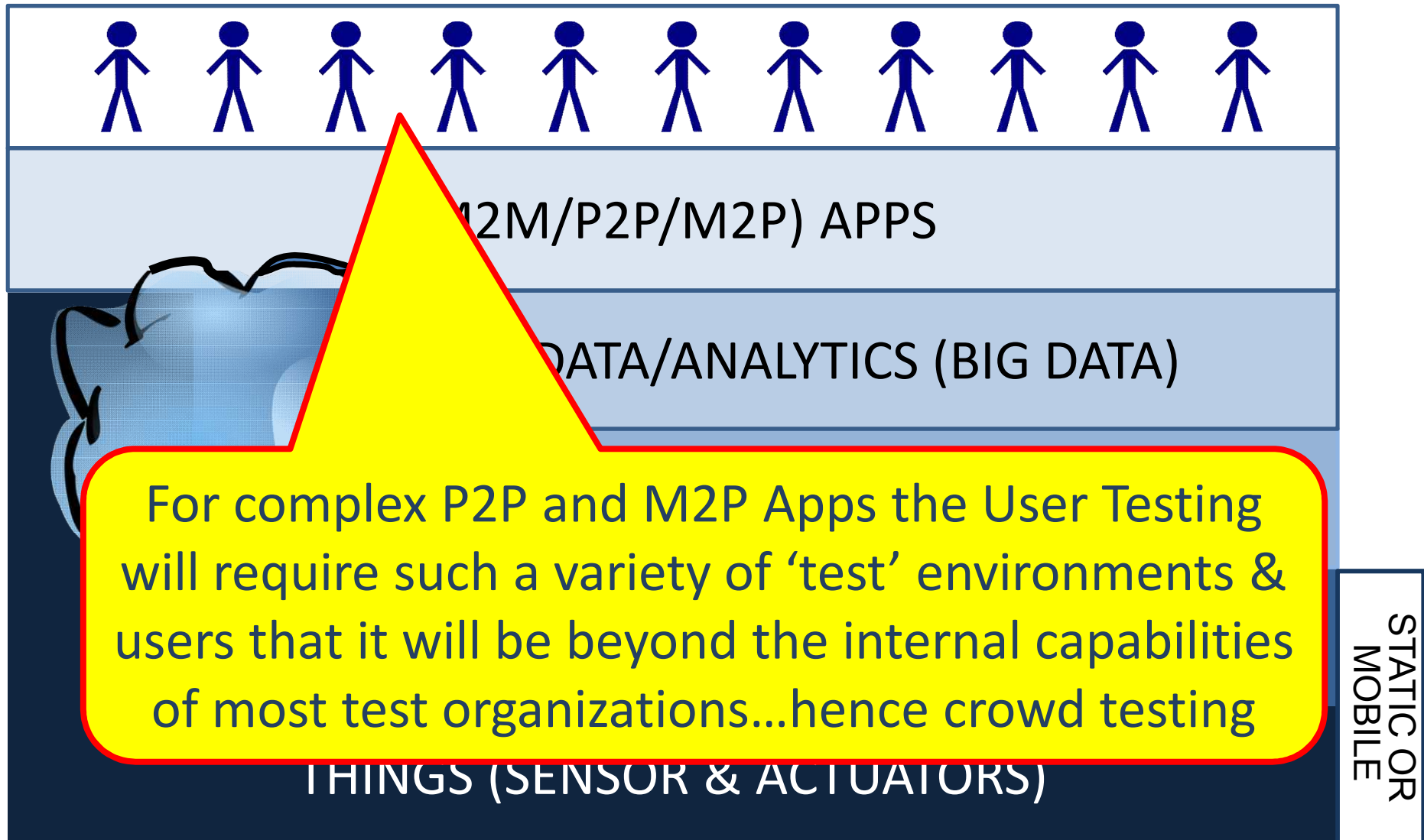
- Risk-Based Testing IS about generating a far more cost-effective test strategy that saves money and maintains quality
- Risk-Based Testing IS NOT about prioritization and an excuse to not test some features



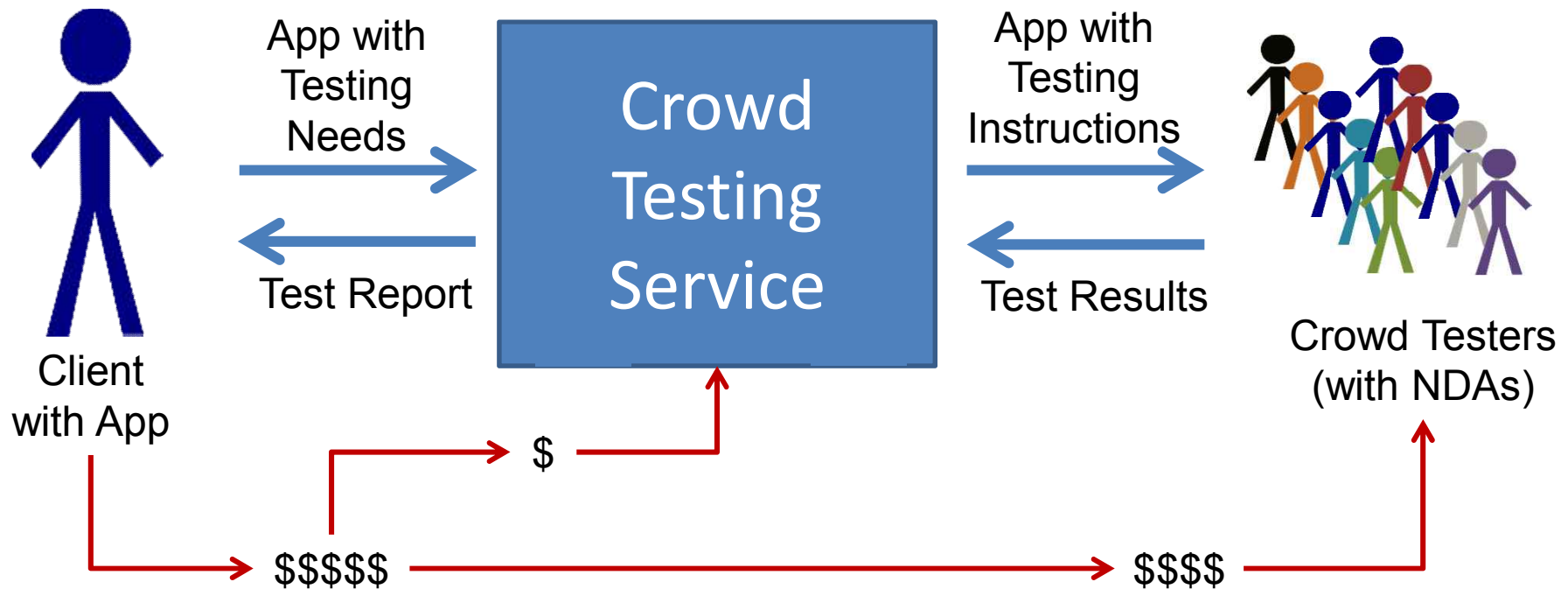
Internet of Things – Release Testing



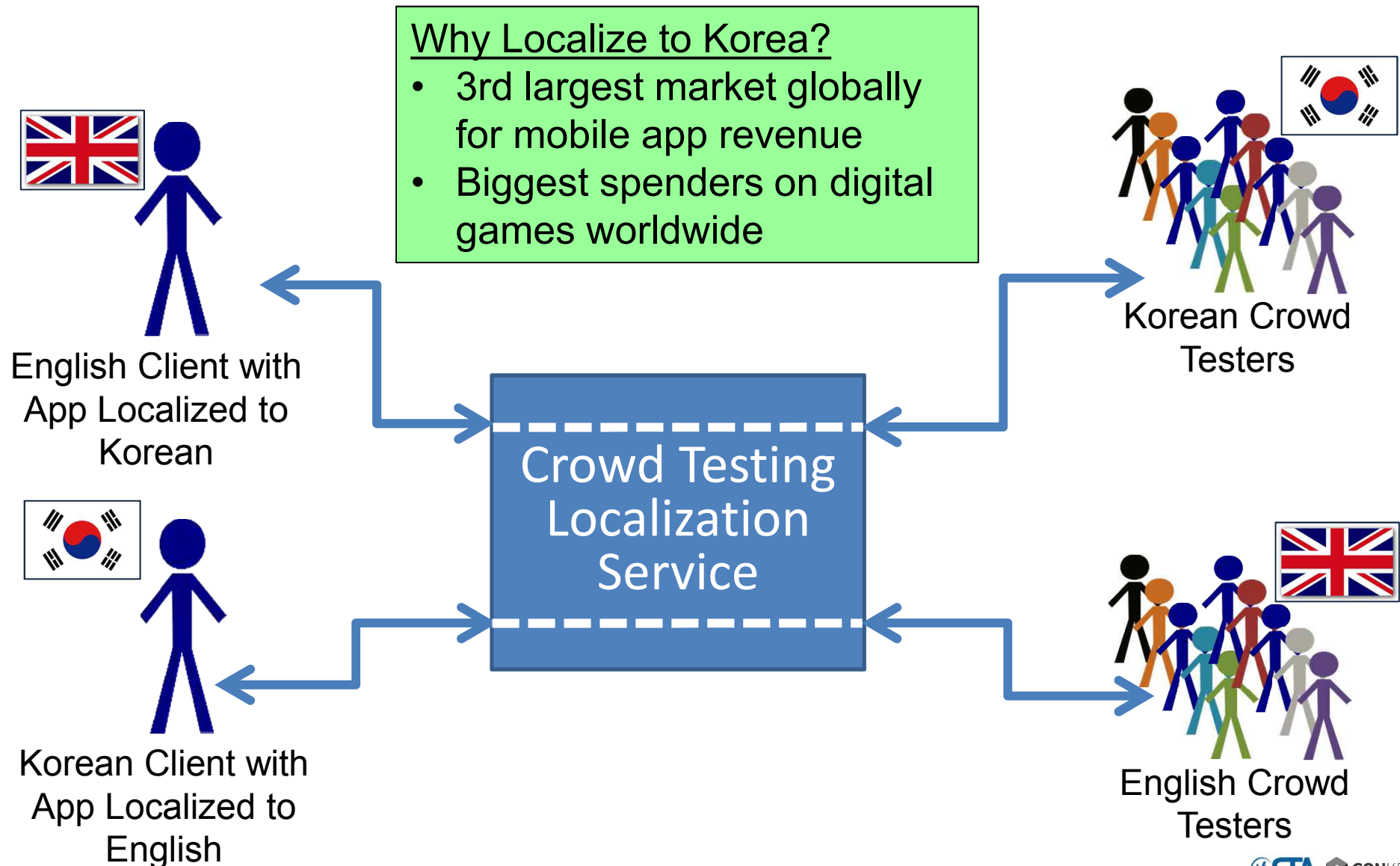
Internet of Things – End User Testing



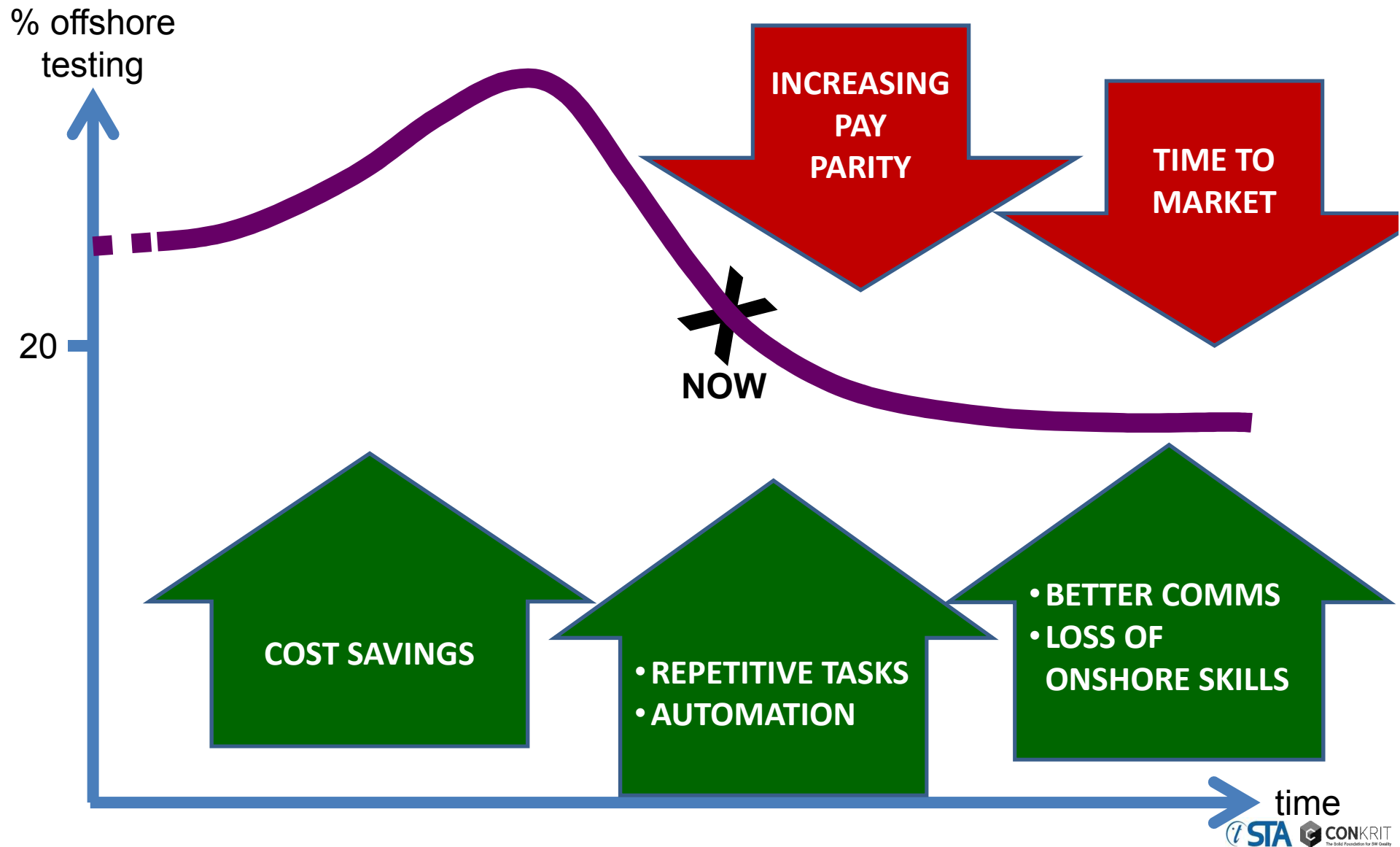
Crowd Testing



Crowd Testing & Localization



Offshore Testing



Gamification of Testing



Conclusions

- Agile
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Thanks for listening 😊

Any Questions?