

Being knowledge centric and sustainable in reliability engineering implementations

Bhavesh Sampath, bhavesh.sampath@capgemini.com, Anand Sunder, anand.sunder@capgemini.com

Abstract:

The growing complexity of systems has given reliability engineering a new turn over 2019-2021 (Kang Harbinder,2020). While trying to scale up consumption and optimize it we see that there needs to be uniform availability of technology, processes and tools to cover this divide.

Introduction:

There are the following key drivers behind the need for a standardized approach (Cohen Hannah,2019):

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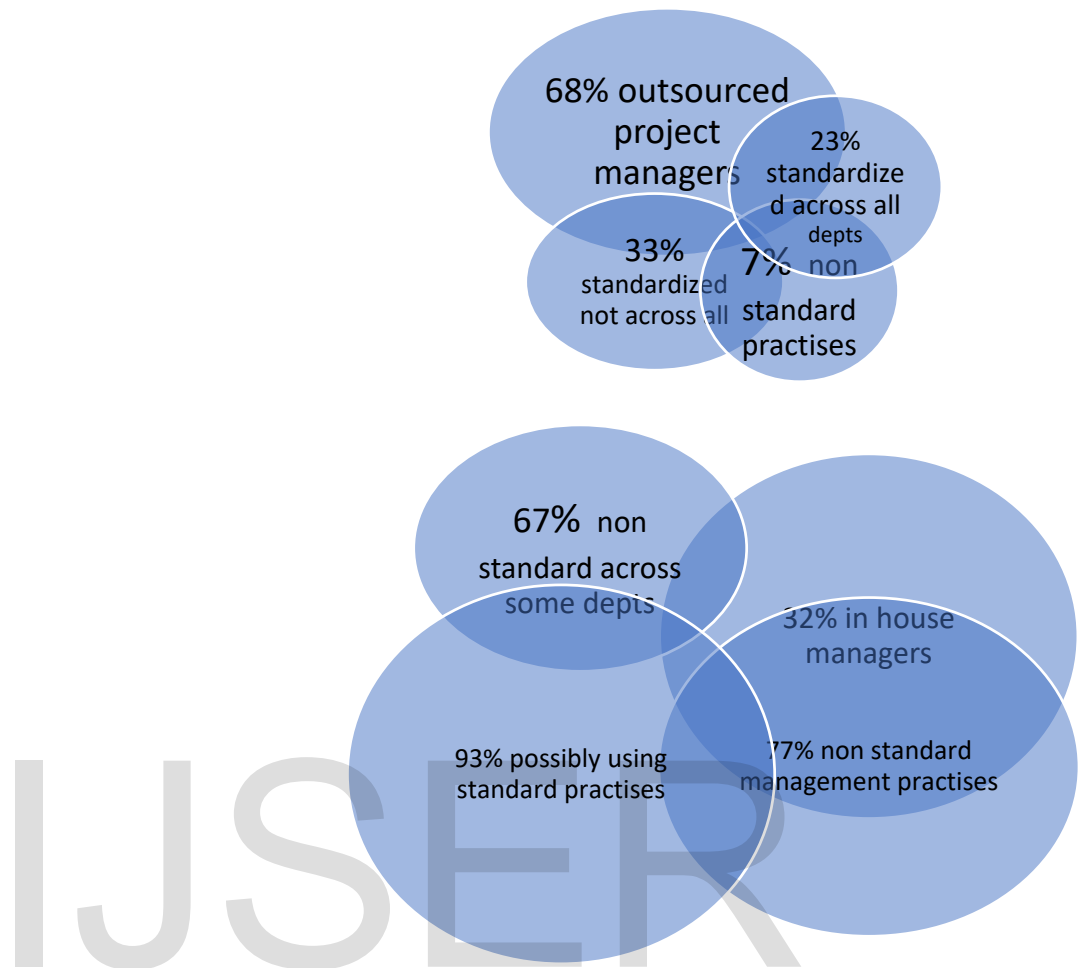


Figure a: Derived Illustration of organizational practices as of 2018 (Cohen Hannah,2019)

It follows suit that the standardization spans across a population 7-32%, this indicates that a vast majority of IT systems are unorganized and following tribal knowledge (68%-93%).

The task is to spread the knowledge from the 32% of the population to the 68%.

Reliability Engineering is supported in organization styles that include (Franco & Brown e.t al,2019):

- i) Kitchen Sink, a.k.a. “Everything SRE: a) No gaps between SRE teams
 - b) Easy to spot patterns
 - c) Glue between disparate dev teams
- ii) Infrastructure: a) Allows developers to use DevOps practices
 - b) SRE’s can focus on providing highly reliable infrastructure
- iii) Tools: None
- iv) Product/Application: a) Clear focus on team efforts, allowing clear link from business priorities to team efforts
- v) Embedded: a) Enabled directed SRE expertise on specific problems or teams
 - b) Allows easy demo of SRE practices
- vi) Consulting: a) Help in further scaling by being decoupled from directly changing code and configuration

An ideal starting point in maturity journey would follow the following flow chart (Hellman, Rafael 2020):

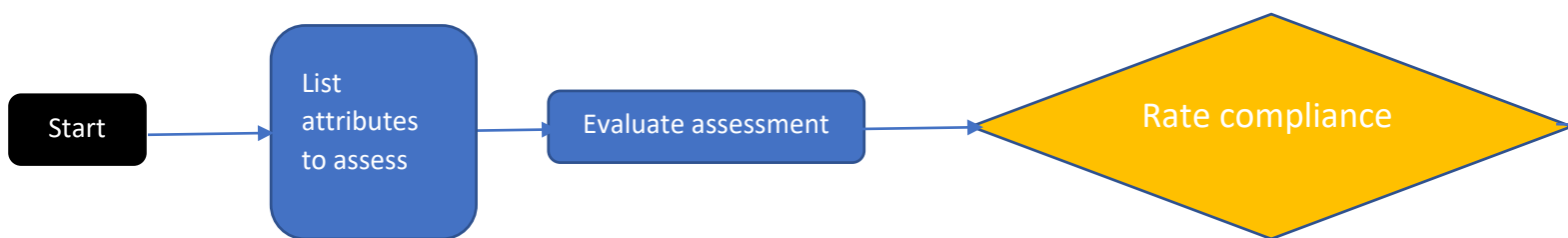


Figure b: Flow chart representing compliance validation and results communication Ideally the CXO’s must embed DevOps practices within their agile implementations, given that their population is relatively ahead, here again there must be a spread of tribal knowledge (IDG Communications,2019):

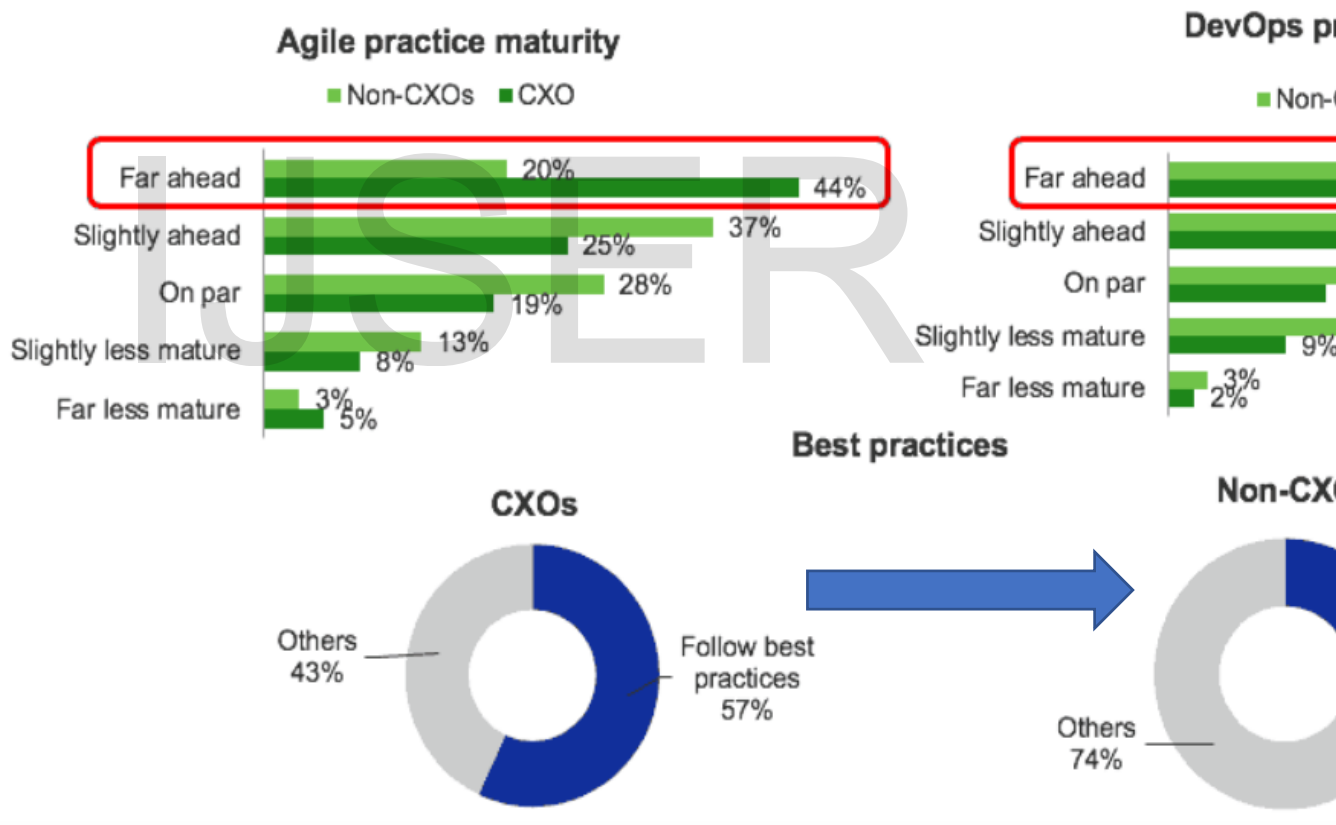


Figure c: DevOps Maturity as per Customer Experience Officers (IDG Communications,2019), arrow indicating flow of tribal knowledge

The infographic below shows the high, medium and low growth areas revenue wise(Mordor Intelligence,2021) :

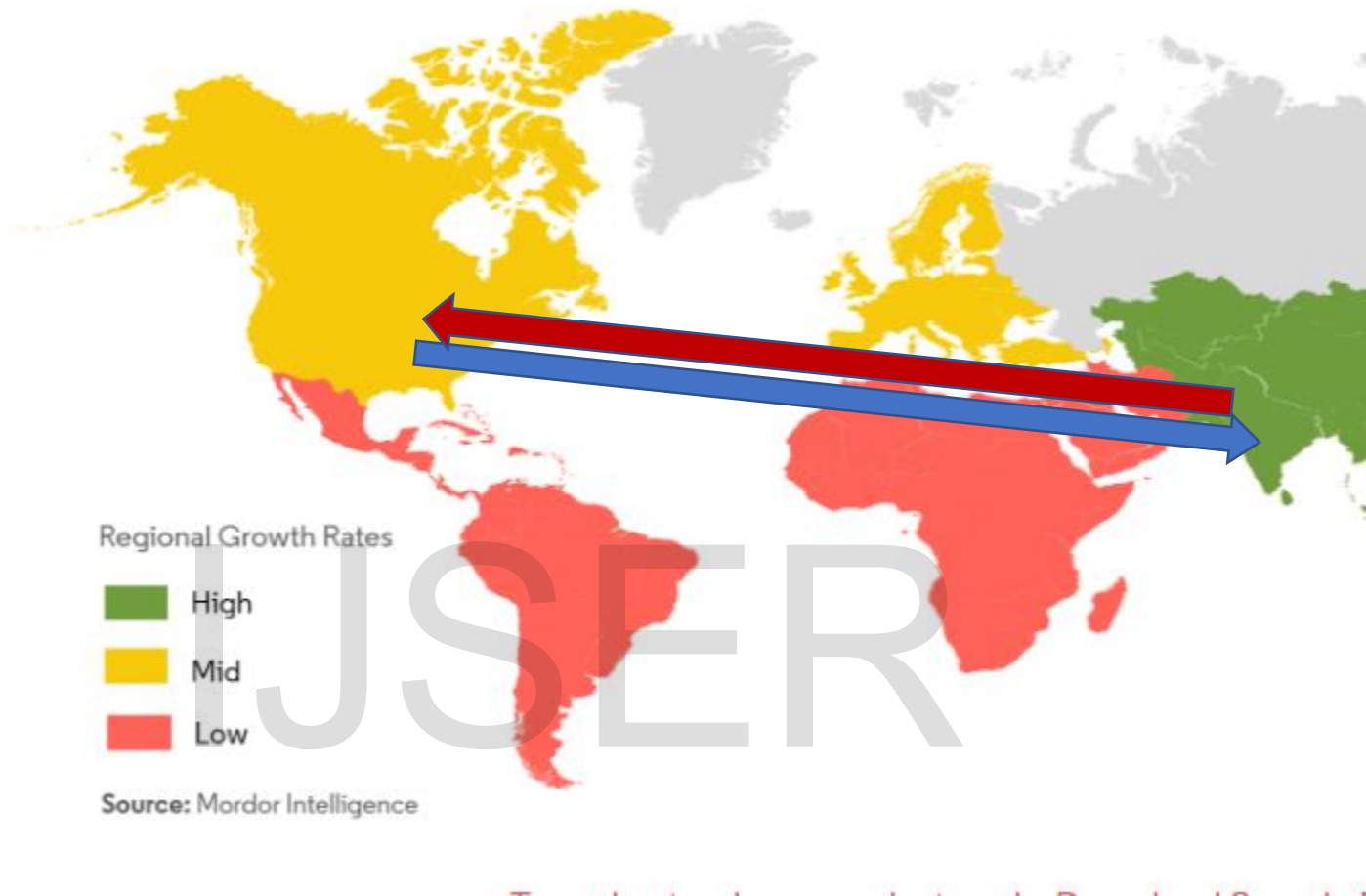


Figure d: Geographic distribution of financial services markets (Mordor Intelligence,2021)

Reliability Engineering is in advanced or mature stage in North America, Europe, Australia and New Zealand, whereas rest of Asia is trying hard to be the vendor market to bridge the gap in supply of trained personnel. The blue arrow represents knowledge flow and the red representing flow of vendors. We need to realign project lifecycles to cater to this spike in demand of reliable systems.

Conclusion:

Along with the flow of tribal knowledge within IT systems, there is a need to exchange critical knowledge and maintain the trade balance in the IT services sector (in context of Reliability Engineering)

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