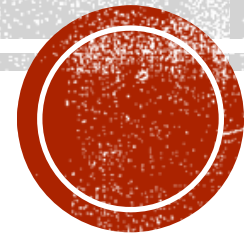


FACTORS AFFECTING TECHNOLOGY ADOPTION CHOICES

**2019 TRANSFORMATION SUMMIT
SUMMIT GALLERIA HOTEL, MAY 6, 2019**

by Wilson Ng , DBA 2015
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Advisor: Prof Robert Davison



SELF-INTRODUCTION

- Managed software and systems integration companies for over 30 years
 - Ngenius IT Stores
 - Ng Khai Development Corp. – 450 employees including subscriber line internet (SLI) support and install for Cebu and Davao for Globe Telecom
 - Npax Philippines – 160 software dev and tech support in Manila and Cebu providing work for companies in United States and Japan
 - G++ - warehouse management system for dry and cold storage for 4 cities
 - Over 10,000 sqm of managed office space for lease (eNGy Tech and FPN Epic)
- Personal
 - Microsoft Most Valuable Professional MVP 2003-2009
 - Sunstar Daily Tech columnist 1994-present
 - Philippines Ernst and Young Entrepreneur of the Year for Small Business 2004



RESEARCH BACKGROUND

- Companies / people who are innovators or early adopters generally have better results
- Enterprise mobility – organizational deployment of mobile resources to gain access to real-time information anytime, anywhere, and across all devices.
 - Adoption is key to competitiveness and winning in the marketplace
- Innovation Diffusion Theory and Technology, Organization Environment (TOE) theory are two widely used studies to predict people or companies adopting innovation
- Validate whether these theories can be used to predict adoption of innovation in Enterprise mobility, to a local setting.

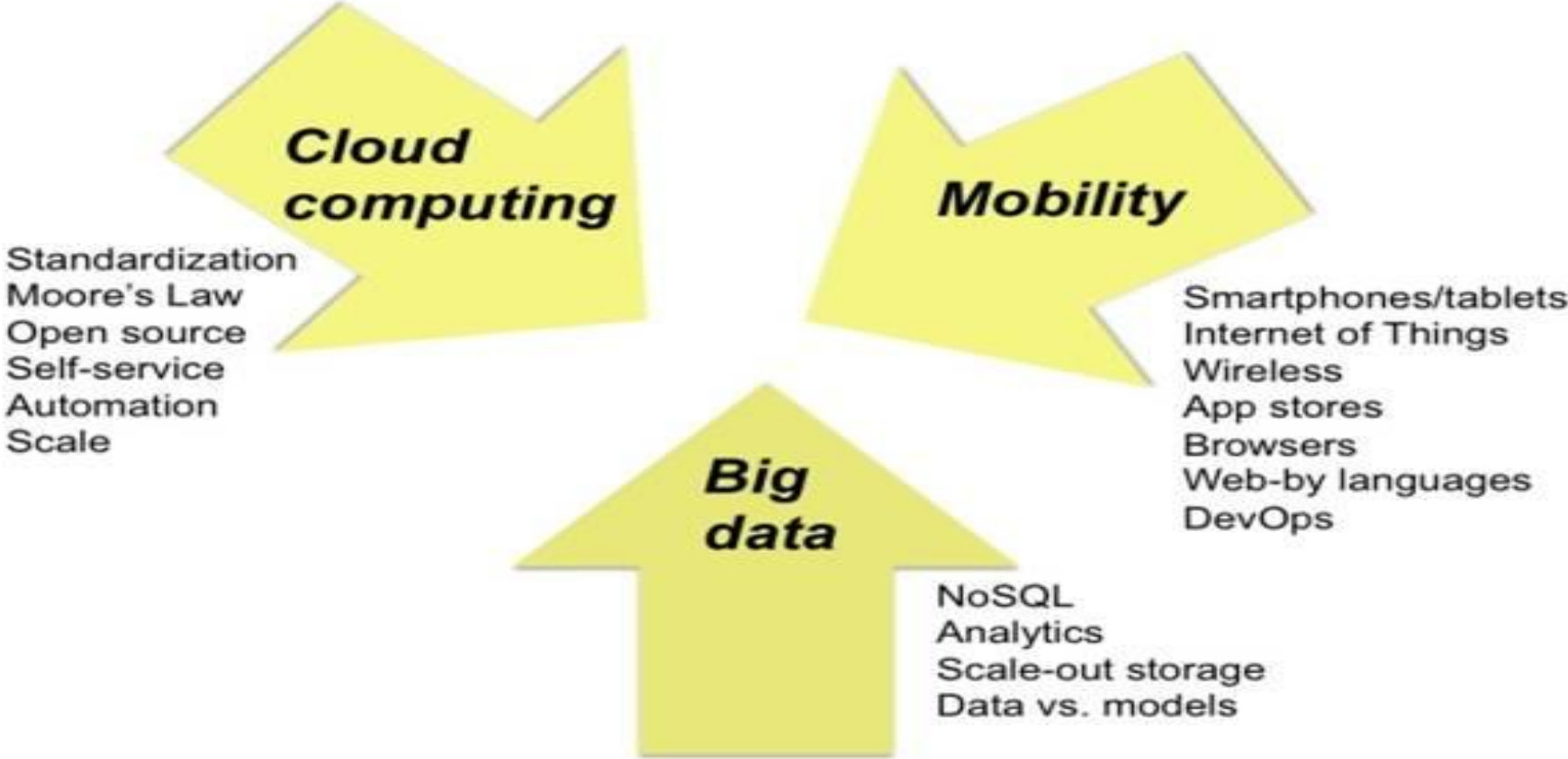




ADOPTER CATEGORIZATION



ENTERPRISE MOBILITY 3 ELEMENTS



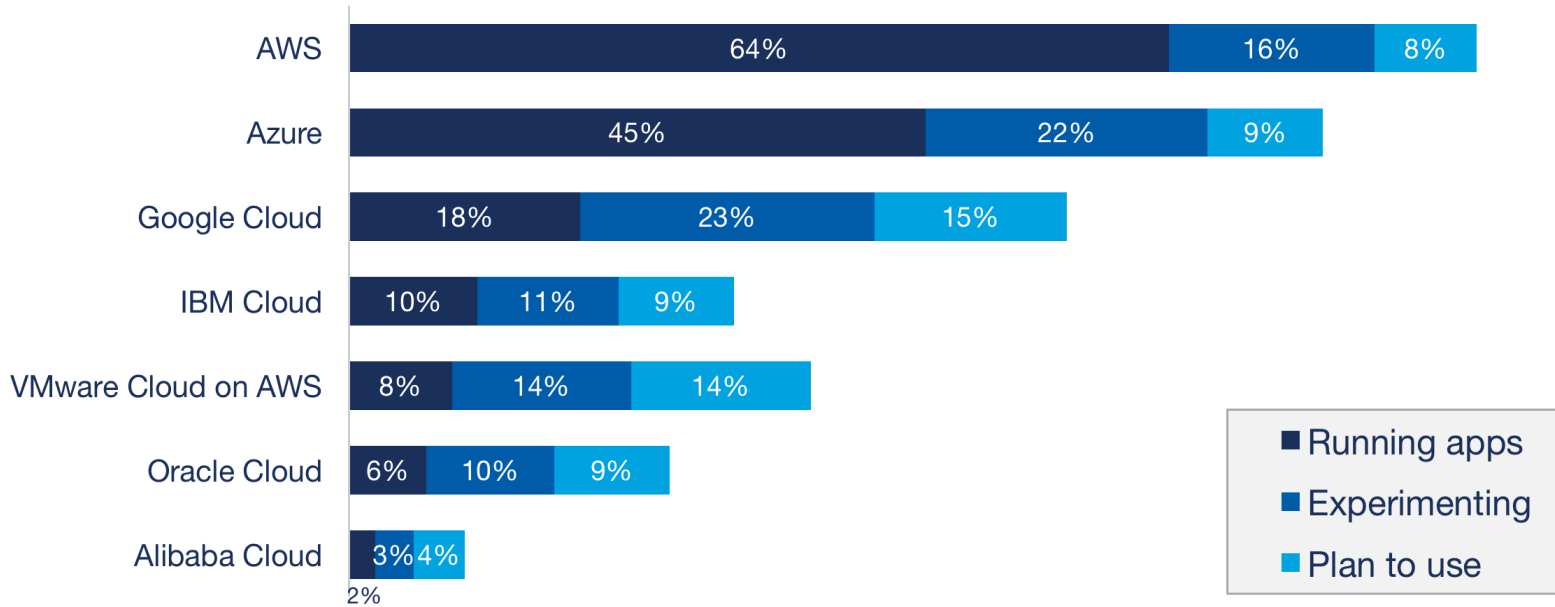
BENEFITS OF CLOUD COMPUTING

- **Reduced cost**
 - reducing cost in IT infrastructure and annual software license and maintenance
- **Quicker deployment**
 - service provider can develop and host applications quicker
- **Greater scalability**
 - no longer limited to the computing power of on-premise servers
- **Higher flexibility**
 - data is accessible through any device
- **Business continuity**
 - real-time collaboration



Public Cloud Adoption

% of Respondents Running Applications

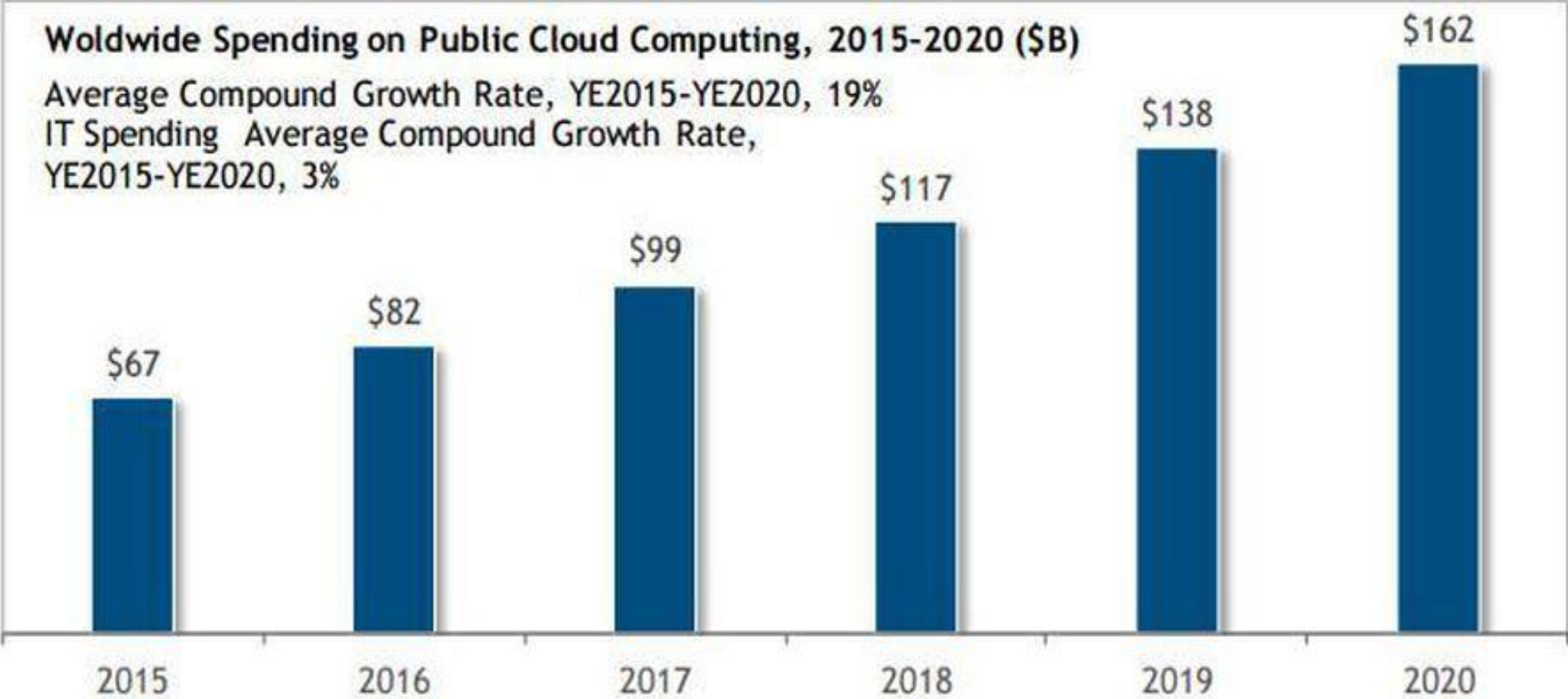


Source: RightScale 2018 State of the Cloud Report

CLOUD SERVICE PROVIDERS



The Rapid Growth of Cloud Computing, 2015-2020

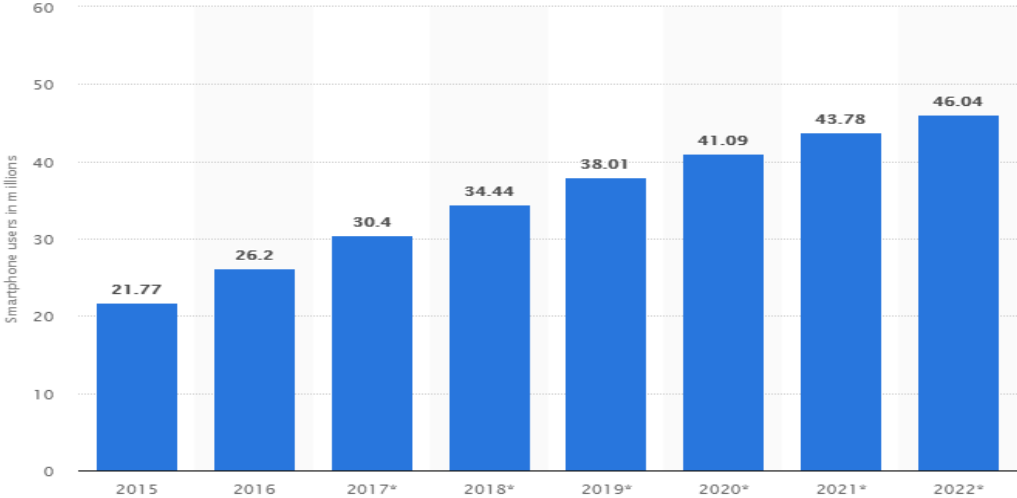


Source: IDC, 2016



MOBILE STATISTICS

In 2017, there were 30.4 million smartphone users in the Philippines



In 2017, 2.282 million people will access email via their mobile device

	2014	2015	2016	2017	2018
Worldwide Mobile Email Users* (M)	1,152	1,422	1,732	2,002	2,282
<i>% Growth</i>		23%	22%	16%	14%

Table 2: Worldwide Mobile Email User Forecast (M), 2014-2018



MOBILITY AND CLOUD GROWING IN CONJUNCTION

ORGANIZATIONS GLOBALLY ARE MOVING FURTHER AWAY FROM ALLOWING

employee-owned devices to access a company's cloud resources.



PCs are more strictly regulated, with **71% allowed access** to cloud resources if organization-owned (up from 67% in 2014), but **only 28% allowed if employee-owned.**

THE SHARE OF ORGANIZATIONS ALLOWING ACCESS TO CLOUD RESOURCES FROM EMPLOYEE-OWNED SMARTPHONES FELL



WHILE THE SHARE ALLOWING SUCH ACCESS FROM COMPANY-OWNED SMARTPHONES GREW



DIFFUSION OF INNOVATION THEORY

- Rogers (as cited in Sahin, 2006) defines diffusion as:
“the process by which an innovation is communicated through certain channels over time among the members of a social society”
- this theory that can be used to explain the dispersal of any new idea or practice
- often used in information systems research to explain user adoption of new technologies



INNOVATION ATTRIBUTES (FROM WITHIN)

- **Relative advantage**
 - “degree to which an innovation is perceived as being better than the idea it supersedes”
 - increased cost savings and lowered security concerns
- **Compatibility**
 - “degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters”
- **Complexity**
 - “the degree to which an innovation is perceived as relatively difficult to understand and use”
- **Trialability**
 - “the degree to which an innovation may be experimented with on a limited basis”
- **Observability**
 - “the degree to which the results of an innovation are visible to others”



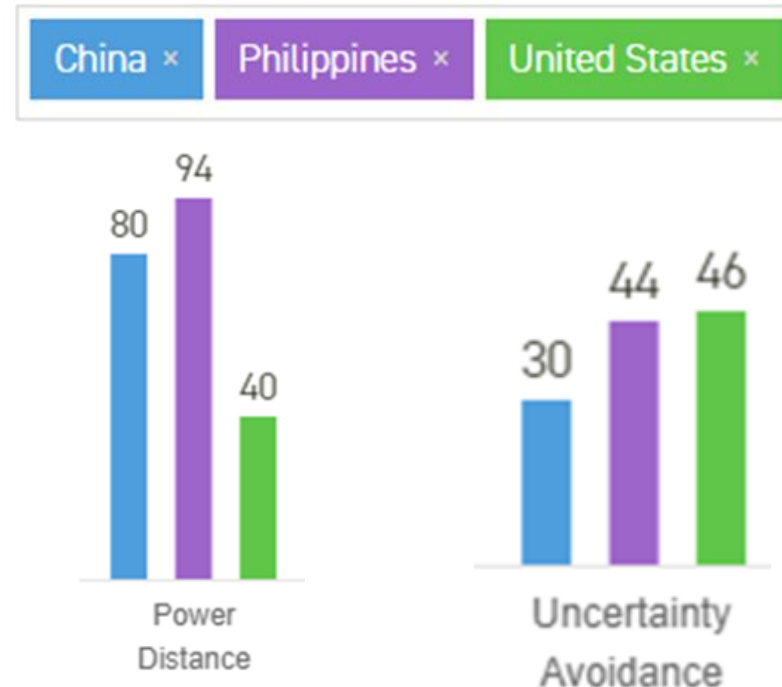
TECHNOLOGY, ORGANIZATION, AND ENVIRONMENT FRAMEWORK (FROM WITHOUT)

- Tornatzky and Fleischer
- describes the internal and external characteristics of an organization, as well as the technological characteristics for explaining factors of IT innovation adoption at the organization level.
- It involves three primary contexts:
 - Technological
 - Same as Diffusion of Innovation : Relative advantage, Compatibility, Complexity
 - Organizational
 - Top Management Support, Organizational Size, Organizational Readiness
 - Environmental
 - Competitive Pressure, Regulatory Support, Trading Partner Pressure



HOFSTEDE CULTURAL DIMENSION THEORY 1

- Framework for understanding society's culture on values of its members.
 - **Power Distance** – people accept and expect that power is distributed unequally
 - Parents treat children as children, older people are respected, subordinates listen to their leaders, are consulted, governments are dictatorial, income uneven
 - **Uncertainty Avoidance** – society's tolerance for ambiguity
 - Less tolerance of deviant persons and ideas, like rules, teachers and leaders have to have “all the answers”.
- **Individualism vs collectivism**
- **Masculinity vs Femininity**
- **Long term vs Short Term**
- **Indulgence vs. Restraint**



METHODOLOGY

Research Setting

- Cebu, Philippines

Research Participants

- 106 respondents (mainly some of the top tier companies in terms of IT adoption)

Research Procedure

- Comprehensive Questionnaire about adoption of innovation and new tech in their personal life and workplace, and characteristics of the person and the company he works for



Position	Frequency	Percent	
Executive Officers	14	21.1	13.21%
Vice Presidents	9	5.3	8.49%
Managers/ IT Heads	61	60.5	57.55%
Regular Employees	22	13.2	20.75%
Company Size	Frequency	Percent	
less than 10 employees	0	0	0.00%
11-50 employees	16	10.5	15.09%
51-100 employees	11	10.5	10.38%
101-250 employees	22	18.4	20.75%
more than 250 employees	57	60.5	53.77%

	Frequency	Percent	
No foreign ownership	69	57.9	65.09%
1%-25% foreign ownership	5	5.3	4.72%
26%-50% foreign ownership	7	2.6	6.60%
51%-75% foreign ownership	2	2.6	1.89%
More than 75% foreign ownership	23	31.6	21.70%
	Frequency	Percent	
Accommodation and Food	12	10.5	11.32%
E-consumer products and retail	13	13.2	12.26%
Industrial Manufacturing	16	18.4	15.09%
Education	5	2.6	4.72%
Professional Technology Services	18	18.4	16.98%
Property and Construction	11	2.6	10.38%
Finance and Insurance	5	7.9	4.72%
Healthcare and Social Services	4	7.9	3.77%
Others	22	18.4	20.75%
Enterprise mob score of 106 respondents (mean average =4)			
Mean		5.0499	

Predictors	B	t	Sig.
Relative Advantage	.024	.271	.787
Compatibility	.273	3.067	.003*
Complexity	.049	.559	.578
Trialability	.159	1.731	.087
Observability	-.012	-.119	.906
Top Management Support	.179	1.981	.051*
Organizational Readiness	.187	2.042	.044*
Competitive Pressure	.101	1.199	.234
Trading Partner Pressure	.114	1.242	.217
Regulatory Support	.065	.742	.460

Top 3:

a.) Compatibility – (27.3%) company will likely invest in technology that is compatible with existing Infrastructure and expertise. Innovation must be consistent with organization’s value and needs, and Not significantly affect existing work application systems and processes.

b.) Top Management Support (17.9%) – is crucial. Power distance is high 94, and lack of support can lead to failure in Implementation. Top mgt need to “buy in” to the value of the product/service.

c.) Organizational readiness (18.7%) – manpower availability, financial resources and existing Technical infrastructure. Employee expertise is seen as crucial.



THANK YOU!

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