

IBM CAPSTONE PROJECT





CONTENTS

1

Introduction

2

Data Description

3

Methodology

4

Results

5

Discussion

6

Conclusion



RECOMMENDING BUSINESS VENTURES THAT ARE MOST LUCRATIVE AROUND A COLLEGE OR UNIVERSITY CAMPUS IN THE UNITED STATES

By Gospel Saloka-odenma



This work seeks to recommend lucrative businesses one could establish around a college or university campus in the United

Click here to add content of the text, and briefly explain your point of view





What kind of businesses are located around a university campus



How do we know the most available businesses



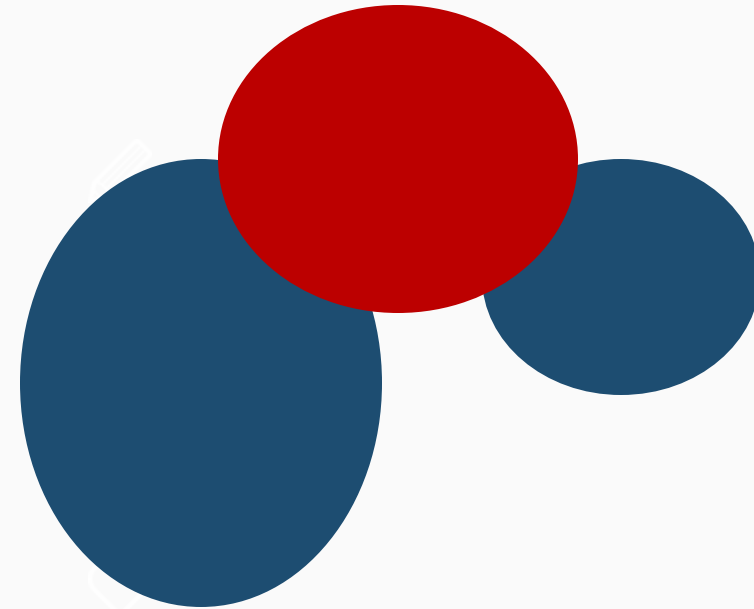
How do we cluster them



What businesses can we recommend



\$





DATA

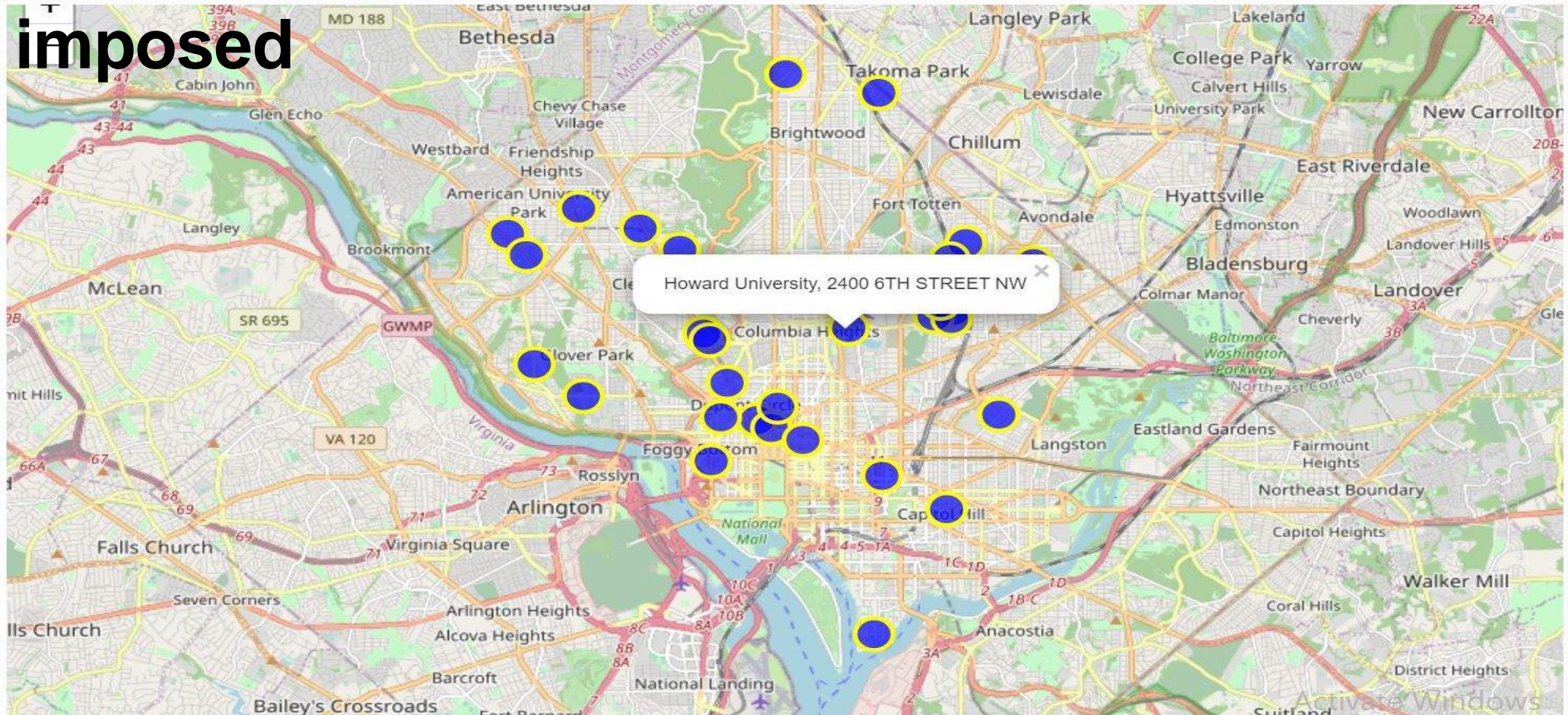


Data of a few United States university campuses were obtained from data.world2 in geojson format. The dataset had the geographical coordinates of each campus nested within the geojson file. The geojson file was cleaned and formatted into a dataframe.

The Foursquare API3 was used to get the common venues around the universities within 1000 mile radius

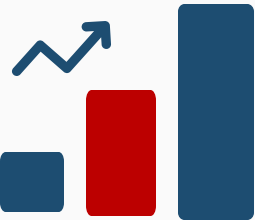
Folium package was used to create maps and place markers on leaflet maps within each campus latitude and longitude location.

Map of US colleges and university campuses with markers supper



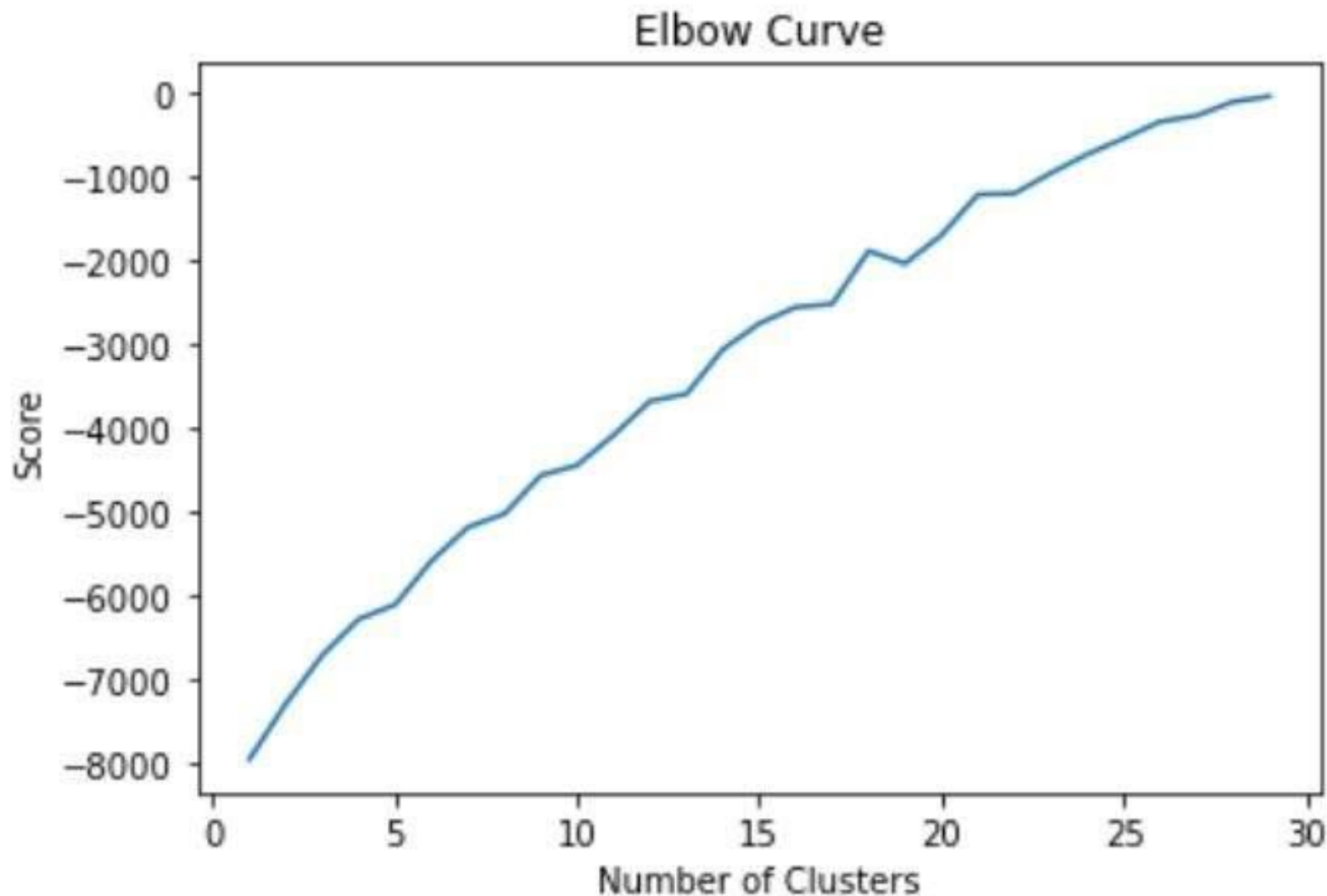


EXPLORING TOP 10 MOST COMMON VENUES AROUND EACH CAMPUS

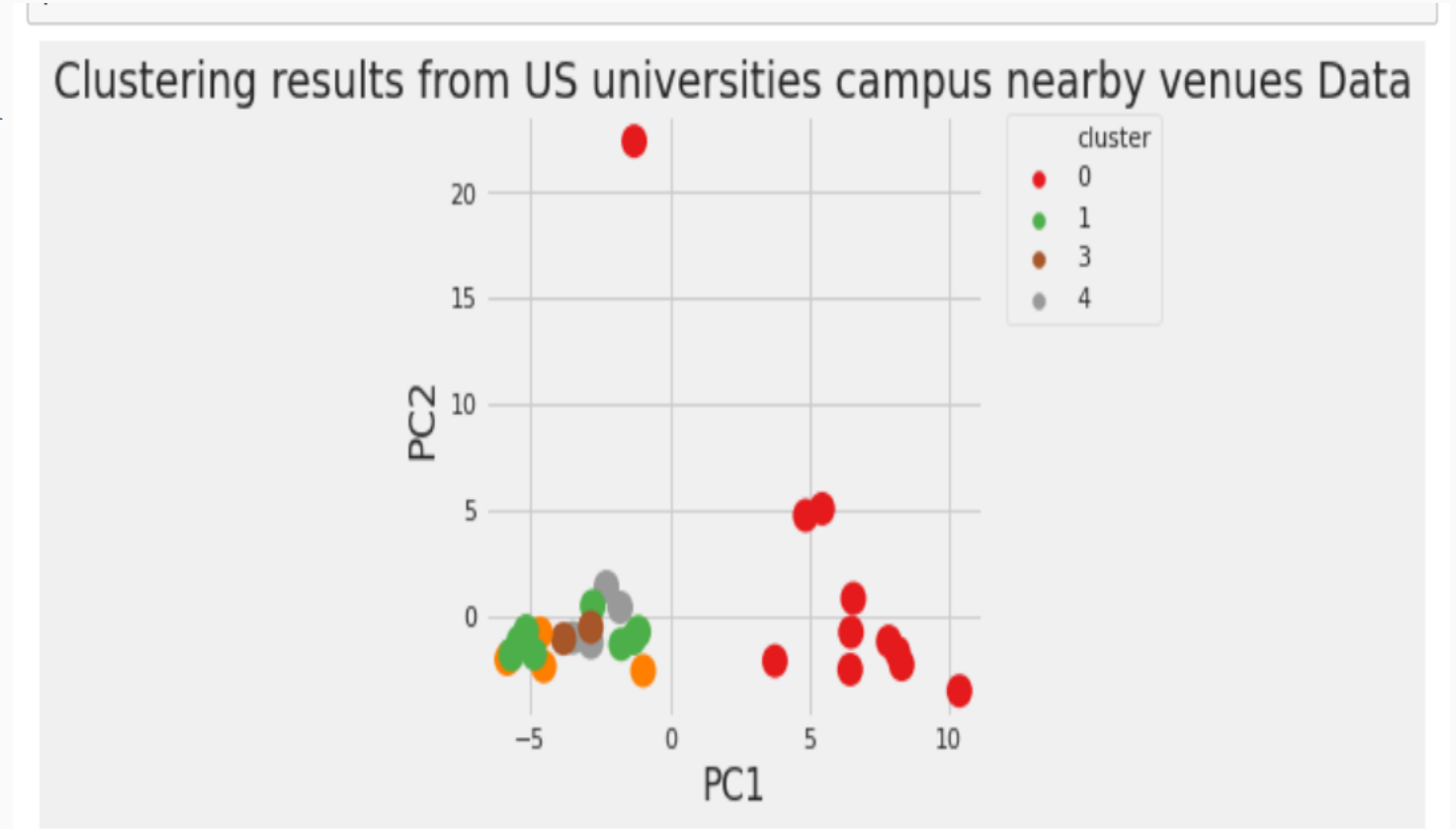


	Name	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	ASU in Washington, DC	Coffee Shop	Park	Cocktail Bar	Hotel	Ice Cream Shop	Gym / Fitness Center	Bar	Taco Place	Bookstore	Pizza Place
1	American University	Coffee Shop	Bus Stop	Bank	Park	Italian Restaurant	Pharmacy	Shopping Mall	Student Center	Burger Joint	Liquor Store
2	American University Washington College of Law	Coffee Shop	Bank	Bakery	Bus Stop	Market	Tea Room	Tennis Court	Seafood Restaurant	Furniture / Home Store	Spa
3	Catholic University of America	Sandwich Place	Liquor Store	Coffee Shop	Bar	Art Gallery	Bookstore	Dance Studio	College Rec Center	Recreation Center	Rental Car Location
4	Cornell in Washington	Hotel	Park	Hotel Bar	Pizza Place	French Restaurant	Sandwich Place	Café	Gym / Fitness Center	Grocery Store	Gym

CLUSTERING NEARBY VENUES



PRINCIPAL COMPONENTS ANALYSIS WITH TWO (2) COLUMNS AND FIVE(5) CLUSTERS



scatter plot of the Principal Component Analysis

❖ WORDCLOUD REPRESENTATION OF EACH CLUSTER

First cluster wordcloud



The first cluster shows that eateries, lodges, and relaxation spots are good business ventures

The second cluster shows that eateries, shopping centers, relaxation spots and medical facilities could be a good business

Second cluster wordcloud



❖ WORDCLOUD REPRESENTATION OF EACH CLUSTER CONTINUED

Third cluster wordcloud



The third cluster shows shopping centers, relaxation spots and convenience facilities could be good business ventures



The fourth cluster shows a shopping center, fitness center, relaxation spots and sporting facility could be a good business investment

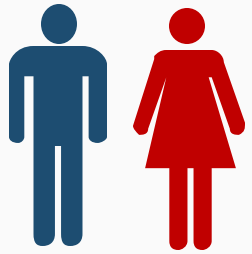
Fourth cluster wordcloud





WORDCLOUD REPRESENTATION OF EACH CLUSTER

CONTINUED



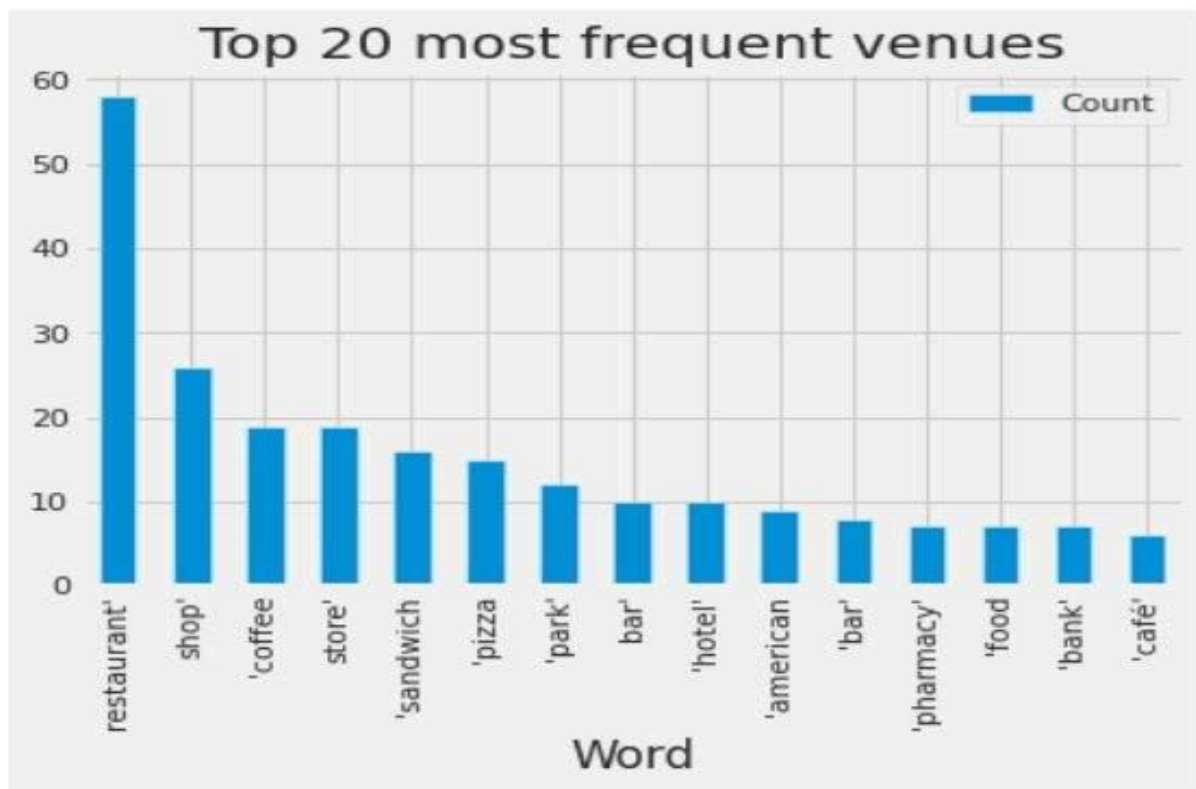
The fifth cluster shows shopping centers, relaxation spots, financial institutions and educational facilities could be good businesses

Fift cluster wordcloud





CHECKING THE TOP MOST FREQUENT VENUES IN THE CLUSTER S



	Word	Count
22	restaurant	58
11	shop	26
10	coffee	19
3	store	19
4	sandwich	16
31	pizza	15
28	park	12
64	bar	10
24	hotel	10
39	american	9
9	bar	8
1	pharmacy	7
82	food	7
58	bank	7
32	café	6



DISCUSSION

1

Any kind of relaxation spot is a lucrative business around a university campus



2

The campuses are almost over loaded with restaurants which tells us that one is bound to face huge competitions. so you could decide to go for less competitive business venture like coffee shop

3

Next to relaxation spots is eateries and shopping centers

4

Some ventures that may not be common but not less lucrative could be financial institutions (bank), medical facilities (pharmacy) and fitness facilities (gym)

5

Coffee shops appear to be an easy and less capital intensive business venture to invest in.

6

Further analysis could be embarked on to have two words processing so we could have something like 'coffee shops' not just 'coffee' to see if one word processing had any negative effect on the results.



CONCLUSION



This work recommends what business venture is most suited for a United States college or university campus which can easily be repeated across any university campus across any country. It reiterates the power of analytics in helping business owners understand what business venture to go into depending on the geographical location. The interesting part is that it does not really have to be for multinational organisations. It is an easy and simple approach that small to mid-size enterprises can embrace.



THANK YOU

