



Big Data & Insurance

Implications for SEA insurers

Please feel free to contact me if you have any questions or would like to discuss Big Data in insurance.



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Agenda

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|-----------|------------------------------------|
| 01 | Introduction |
| 02 | Big Data Introduction |
| 03 | Adoption of Big Data in SEA |
| 04 | Big Data and Organizational Change |
| 05 | Key Takeaways |

The first ever academic research on the adoption of Big Data in the Southeast Asian insurance industry.

Theresa Blissing

- Insurance professional with 10+ years experience in the insurance industry in Europe and Asia
- News Correspondent at www.the-digital-insurer.com for the Thailand market
- Management Consultant at Detecon Consulting APAC. Creating the blueprint for digital transformation in the insurance sector in SEA.



MBA Master Thesis
**“The adoption of Big data in the
Southeast Asian insurance industry:
An organizational change perspective”**

What is today's session about?

Today's session

What is the state of adoption of Big Data in insurance in SEA?

Why and how are insurers adopting Big Data?

What are the challenges?

What impact has Big Data from an organizational perspective?



Live Polls



Audience Specific



Q&A session

What is your opinion on Big Data?

1 It's just a buzzword

2 The benefits do not justify the costs

3 It's too early for the insurance industry to adopt it

4 It's only important for online/direct insurer

5 It's important for all insurers

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The Nature of Big Data: The 4 Vs: Volume, Variety, Velocity and Veracity

1. Volume

Scale of data



<10% of data was created before 2011,
>90% of today's data was created after 2011



Approx. 2.5 exabytes (quintillion bytes) of
data are created each day

2. Variety

Different forms of data



Over 420 million wearable, wireless
health monitors



30 billion pieces of content are
shared on Facebook every month

3. Velocity

Analysis of streaming data



18.9 billion network connections, almost 2.5
connection per person on earth



Modern cars have close to 100 sensors

4. Veracity

Uncertainty of data



Poor data quality costs the US economy
around \$3.1 trillion a year



1 in 3 Business Leaders don't trust the
information

Big Data allows processing of previously untapped data sources and enables real-time analytics on broader scale.

Traditional Business Intelligence



Data Analytics often limited to gigabyte and terabyte scale.



Data Analytics is limited to structured internal data.



Data Analytics are often very time consuming (e.g. hour – day long SQL queries).



Data with low quality and inaccuracies is not analyzed.

Volume

Variety

Velocity

Veracity

Big Data Analytics

Data volumes of several Exabytes can be analyzed efficiently.

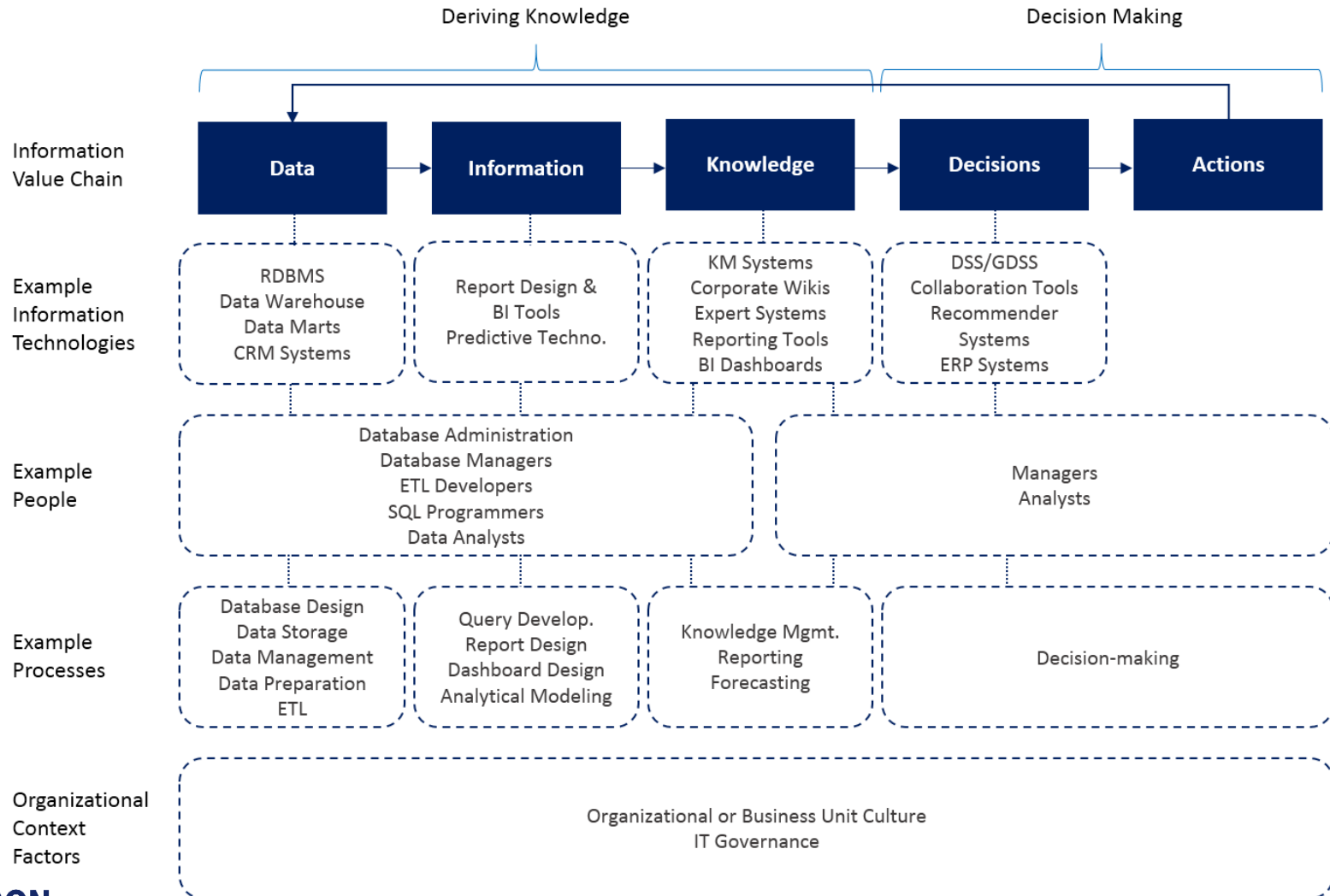
Integration of external and unstructured data is possible.

Data is available at your fingertip and supports real-time Data Analytics.

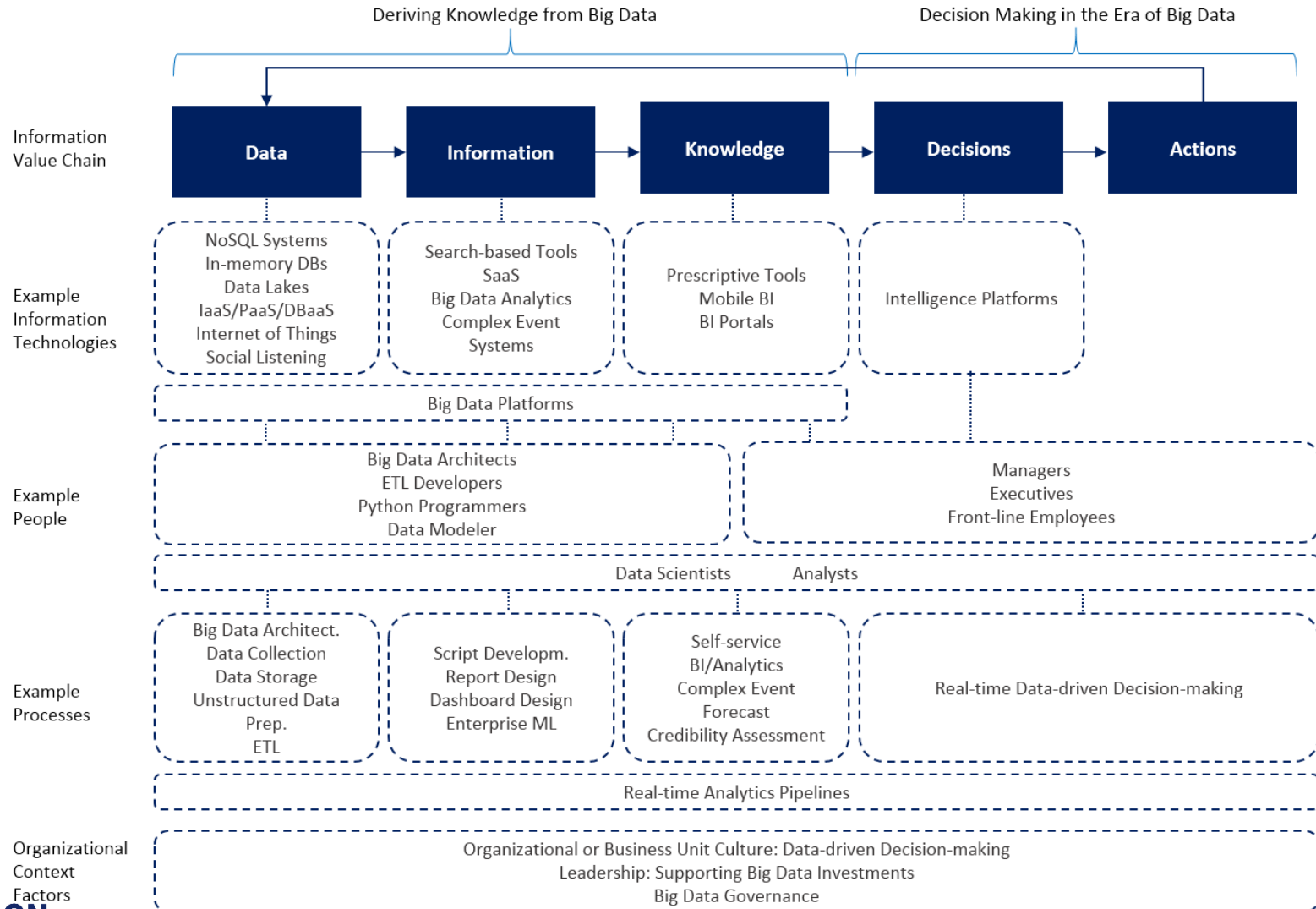
Data cleansing and noise filtering tools to extract meaningful data.



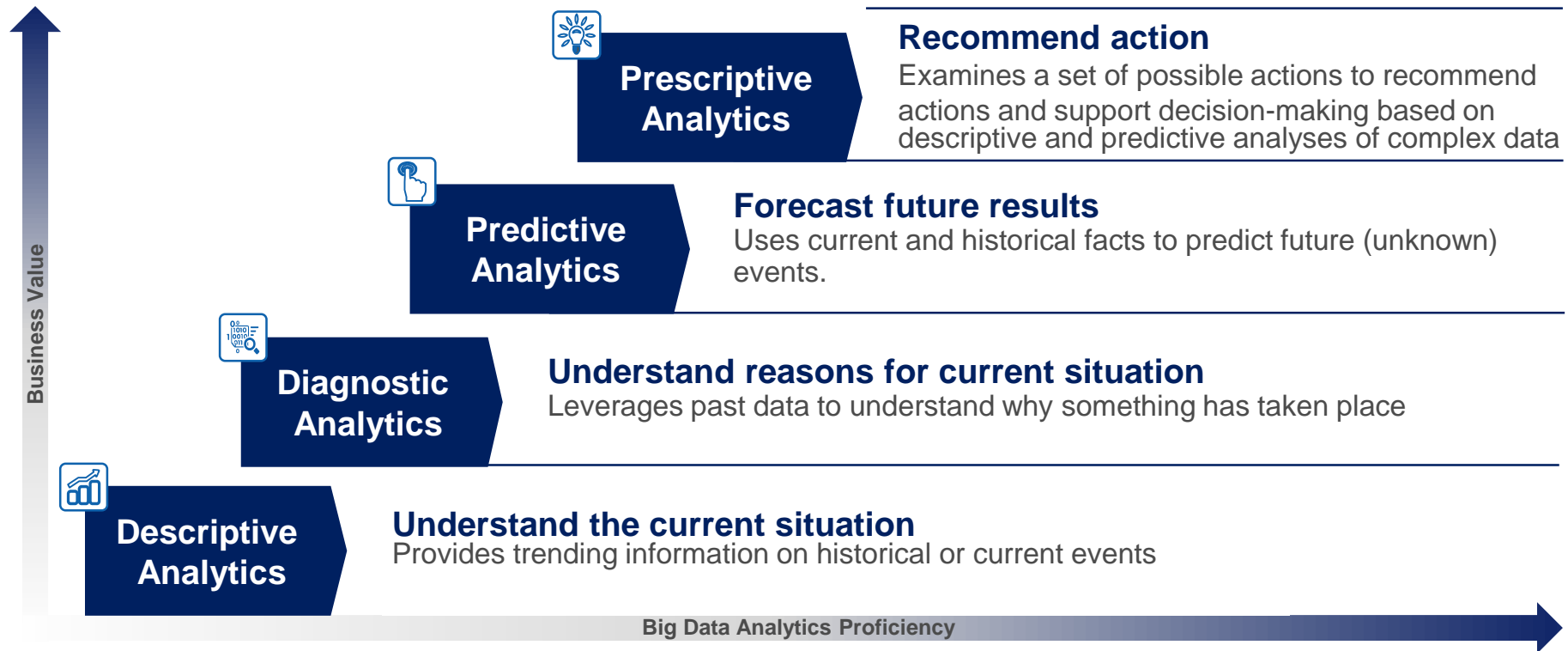
The Information Value Chain



The Big Data Information Value Chain



Different stages of Big Data require different engagement and approach. Which stage are you at now?



Descriptive analytics evolves with Big Data capabilities to prescriptive analytics. Insurers need to build the right foundation to master the different stages.

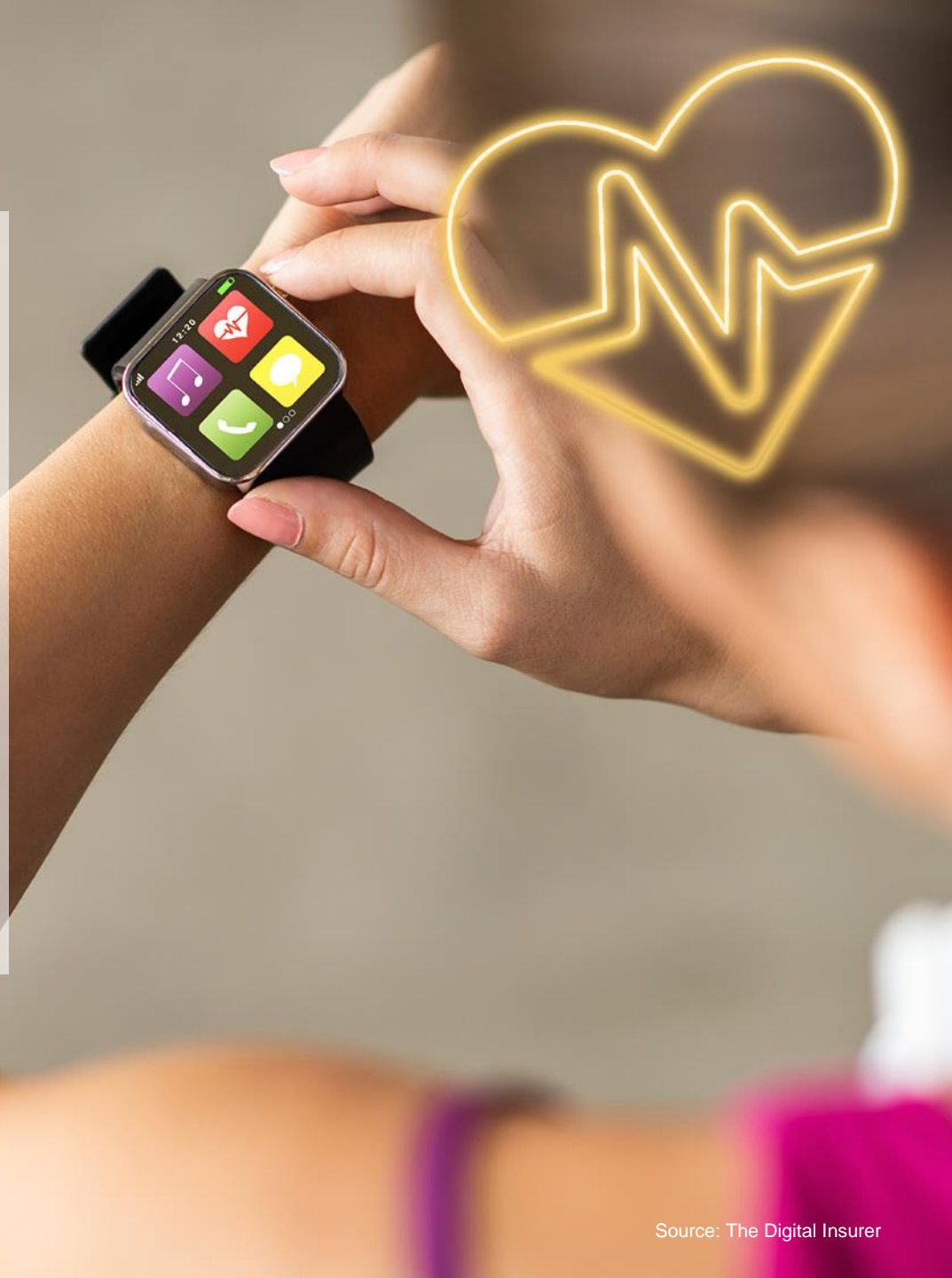
Big Data in Insurance

Wellness and wearables

Discovery has developed Vitality in South Africa in 2000 leading to

- low lapses
- positive mortality and morbidity experience

AIA is offering Vitality in Asia Pacific

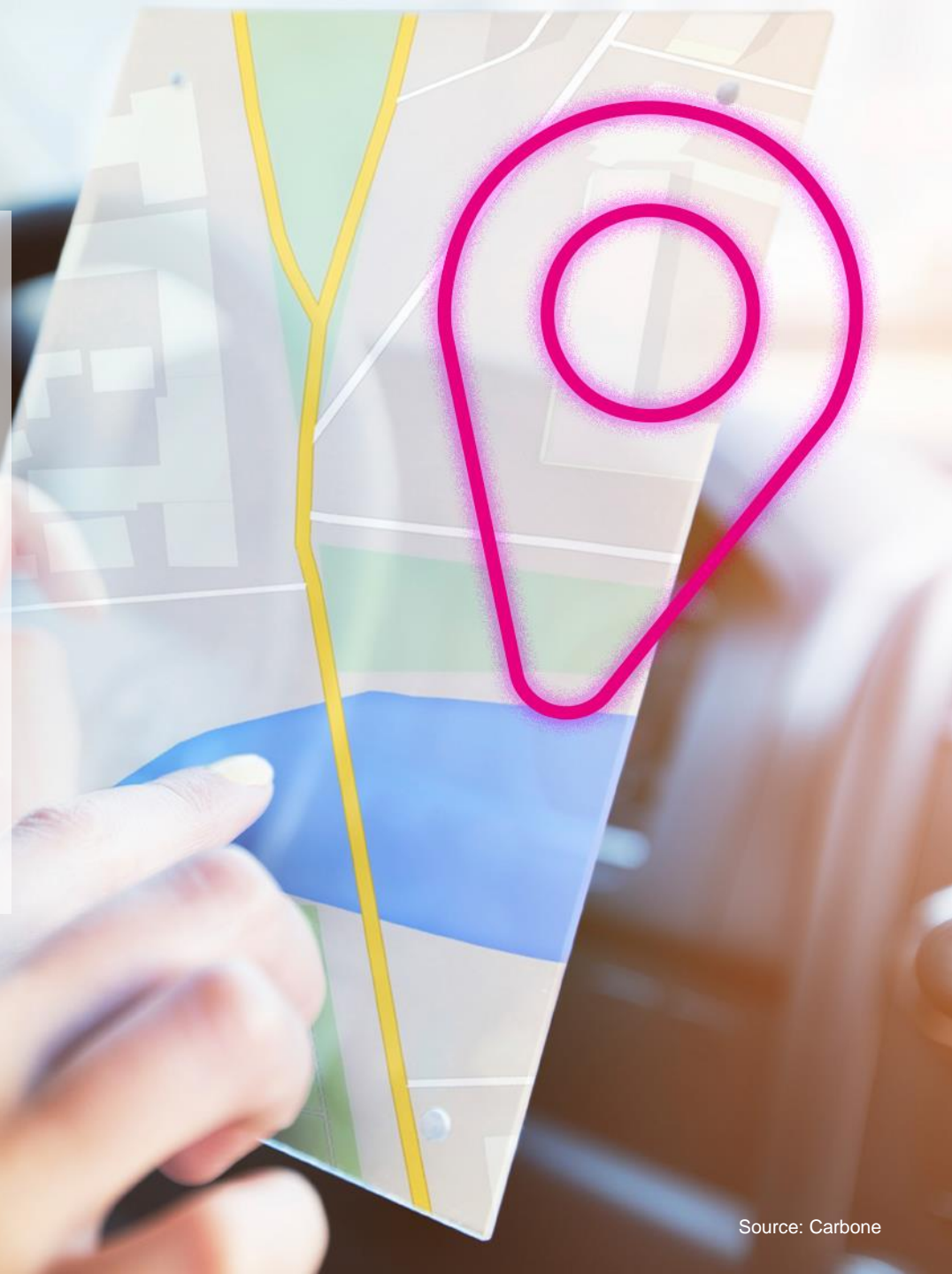


Telematics

Globally around **15.4 million policies** and **2.3%** of premiums are underwritten using telematics

Connected Cars

	Italy	US	UK
2015	4.8m	3.3m	0.6m



Smart Home

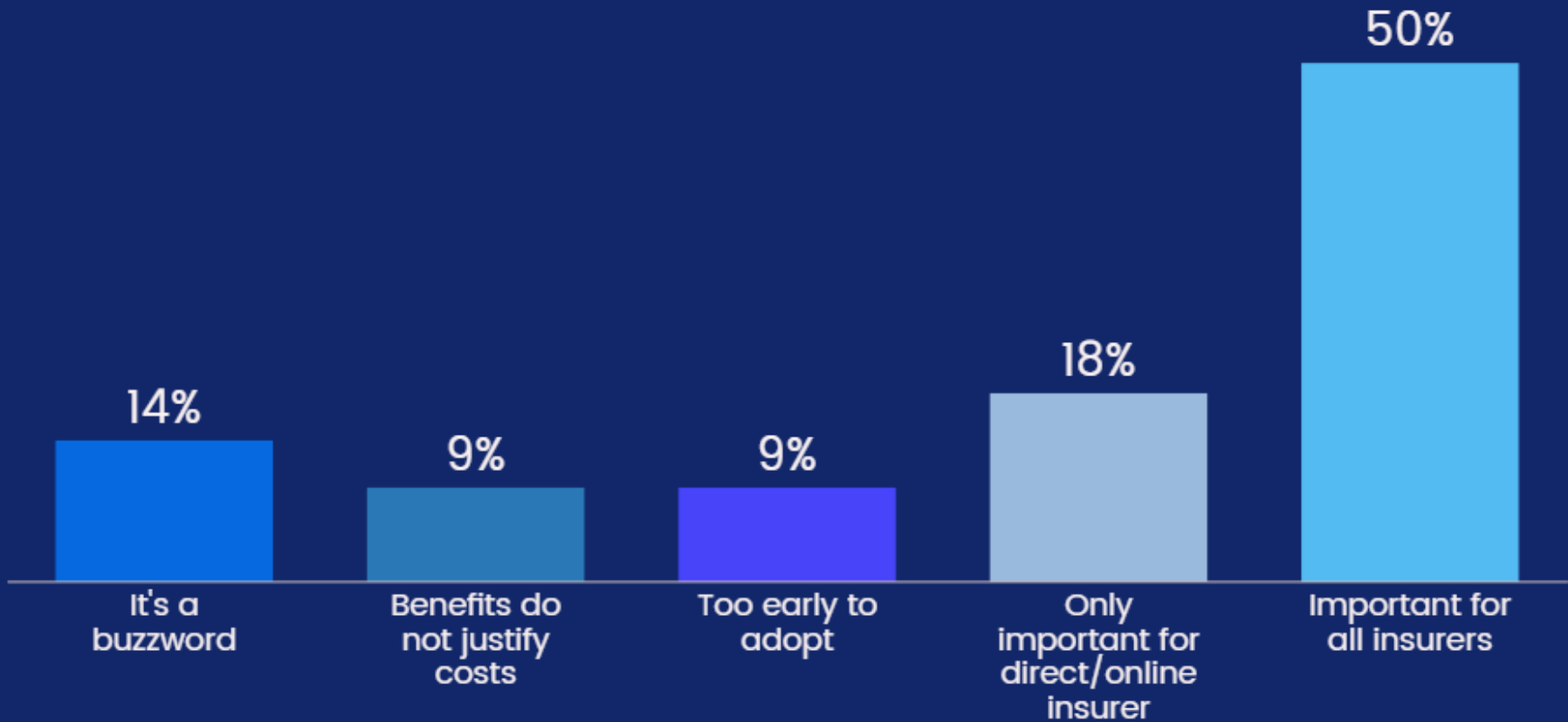
“Protected by tech, backed up by insurance”

Aviva has led a **£5m** series A funding round in Neos, a UK smart home solution provider.

This is one of the **largest investments** raised by a UK InsurTech to date.



What is your opinion on Big Data?



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Big Data Analytics was rated top disrupter with maximum impact on the insurance industry

Capgemini & Efma, 2015

Big data “changes everything, it’s the equivalent to the oil and electricity a century ago and printing five or six centuries ago.”

Henri de Castries, former CEO of AXA



The adoption of Big data in the Southeast Asian insurance industry: An organizational change perspective

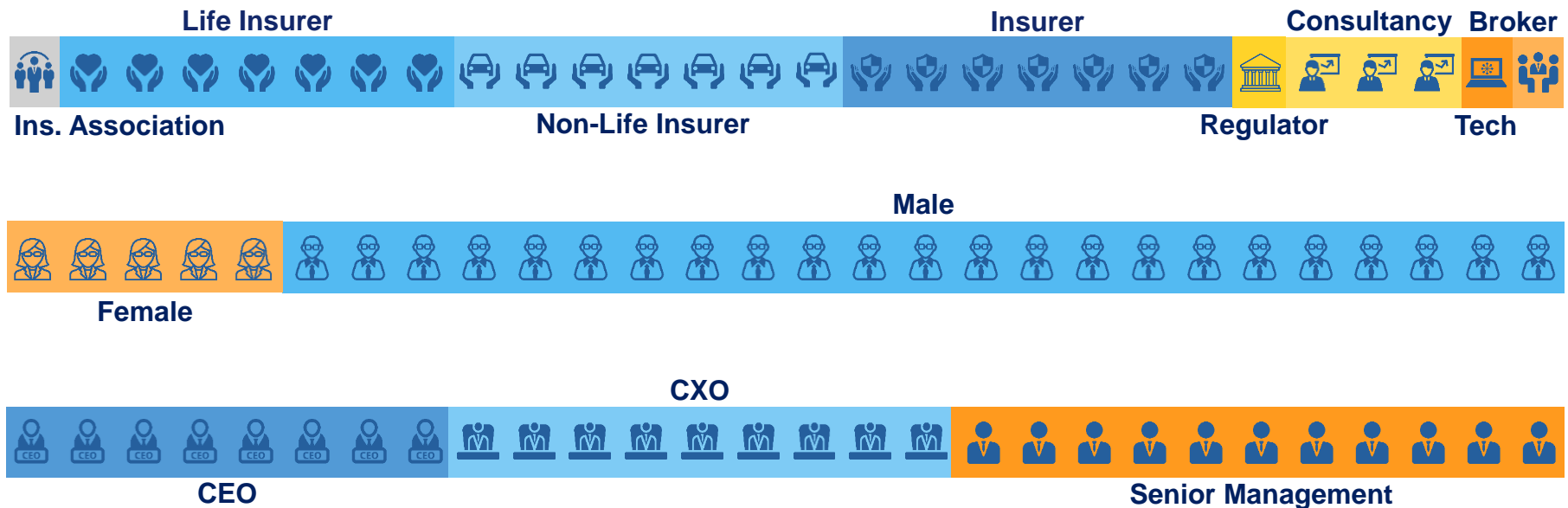
MBA Master Thesis

The aim of this research study was to explore the current state of the Southeast Asian insurance industry's adoption of Big Data and gain insight from insurance professionals on the opportunities, challenges, and strategies in order to exploit the perceived competitive advantages. The following questions guided this research study:

1. What application of Big Data techniques is occurring in Southeast Asian insurance companies?
2. What kind of challenges and resistances do Southeast Asian insurance companies encounter when implementing Big Data?
3. What organizational changes are necessary for Southeast Asian insurance companies to effectively use Big Data?
4. How can Southeast Asian insurance companies prevent or overcome challenges when implementing Big Data?

Qualitative interviews with insurance experts were conducted between November 2016 and February 2017.

28 Insurance Industry Experts



Participants were critical towards the concept and the adoption of Big Data.

Quotes from Research

“Generally I think the word is overused. I think people like to use it as **a catch-phrase**.... I think that there's **more talk than action** about it.”

“There is no point in talking in theory because I guess, my perception of Big Data is, that it's **just a theory at this point.**”

“The less **disintermediated** a market is the less it tends to **leverage on Big Data** for instant decision making.”

“I **don't see the merits of that at this moment in time.** And, I think if they emerge we would invest in it but I don't think we are in a rush to explore it as a **first mover.**”

Despite critics, the majority of participants stated that they are or planning to adopt Big Data.

Have you adopted Big Data in your organization?

1

We are currently not planning to adopt BD

2

We are planning to adopt Big Data in the near future

3

We have started with Big Data pilots

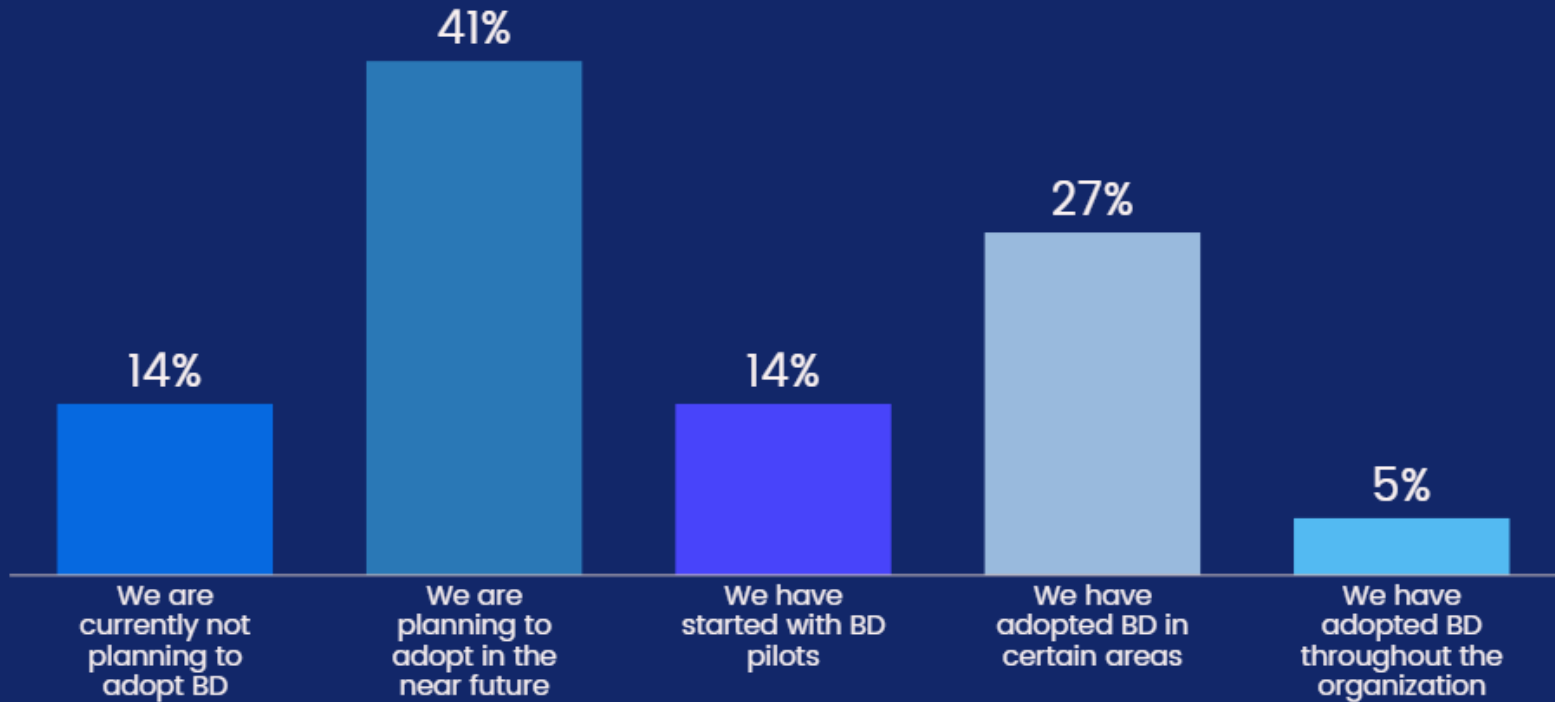
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We have adopted Big Data in certain areas

5

We have adopted Big Data throughout the organization

Have you adopted Big Data in your organization?



Big Data in Insurance

Disruption ahead?

Participants saw the threat of disruption and therefore the need to adopt Big Data.

Quotes from Research

“There are two parts of insurers. The one, I call them the **ignore the fact insurers**, and the other ones are insurer that are very innovative and creating new business models. Honestly, my prediction is that **traditional insurers 50% will be gone in 10 years.**”

“I think it’s a matter of time that **Google and Amazon** who are already holding banking and insurance licenses are going to find out the information that they have, to really do something with the data and translate it into concrete commercialization. That’s going to be a wakeup call and it’s going to **wipe out the insurance companies.**”

“This kind of innovation [Big Data] may not necessarily happen within the industry. Another possibility is that **the internet insurance will turn over all the current big insurance companies.** So it’s like the Nokia is not been killed by another phone company, it has been killed by Apple, right? So we never know what will actually happen”

New competitors are already entering the insurance sector and cause disruption!

Zhong An – China's first online insurance company and the world's largest InsurTech company

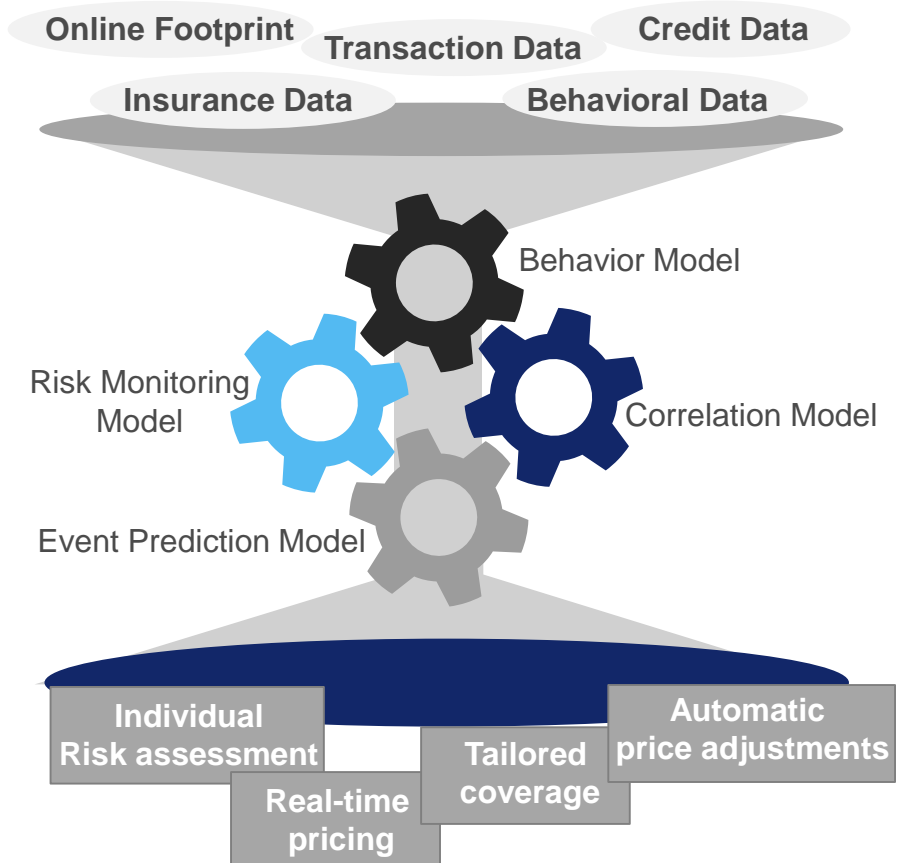
Zhong An

- Founding shareholders:



- Received first online insurance license in China in September 2013
- 150 million clients in year 1
- Was rated #1 on FinTech 100 List
- 630 million policies underwritten
- RMB 2.3 bn (0.3 bn USD) gross written premium in 2015

Big Data Driven Underwriting



Big Data in Insurance

Areas of Adoption

What is your company using advanced analytics for?

Choose all that apply

1

Claims Management
Fraud pattern identification

2

Marketing
Direct / target marketing

3

Product Design
Usage-based or tailor-made products

4

Propensity Models
Propensity to buy / laps

5

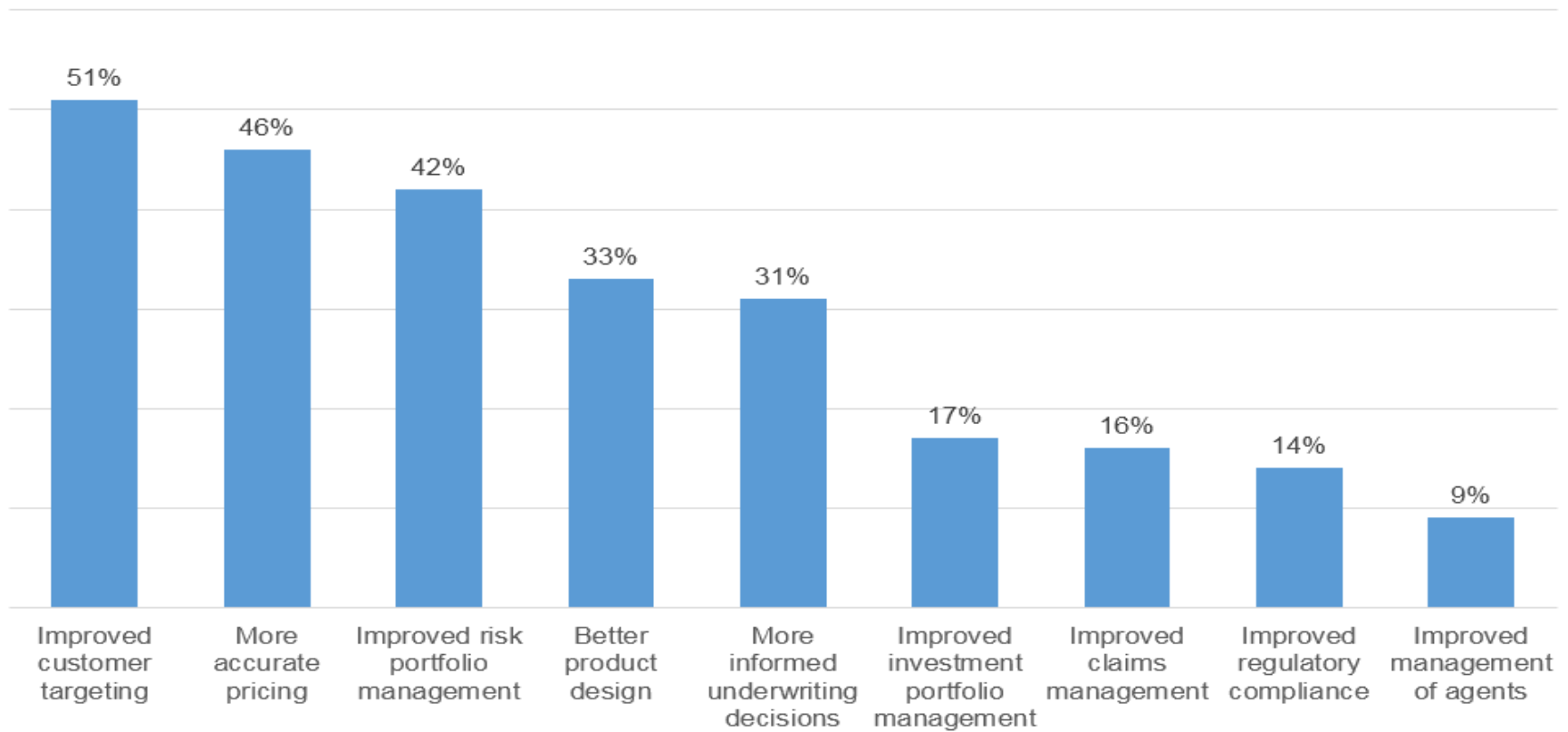
Sales Support
Support for agents and brokers

6

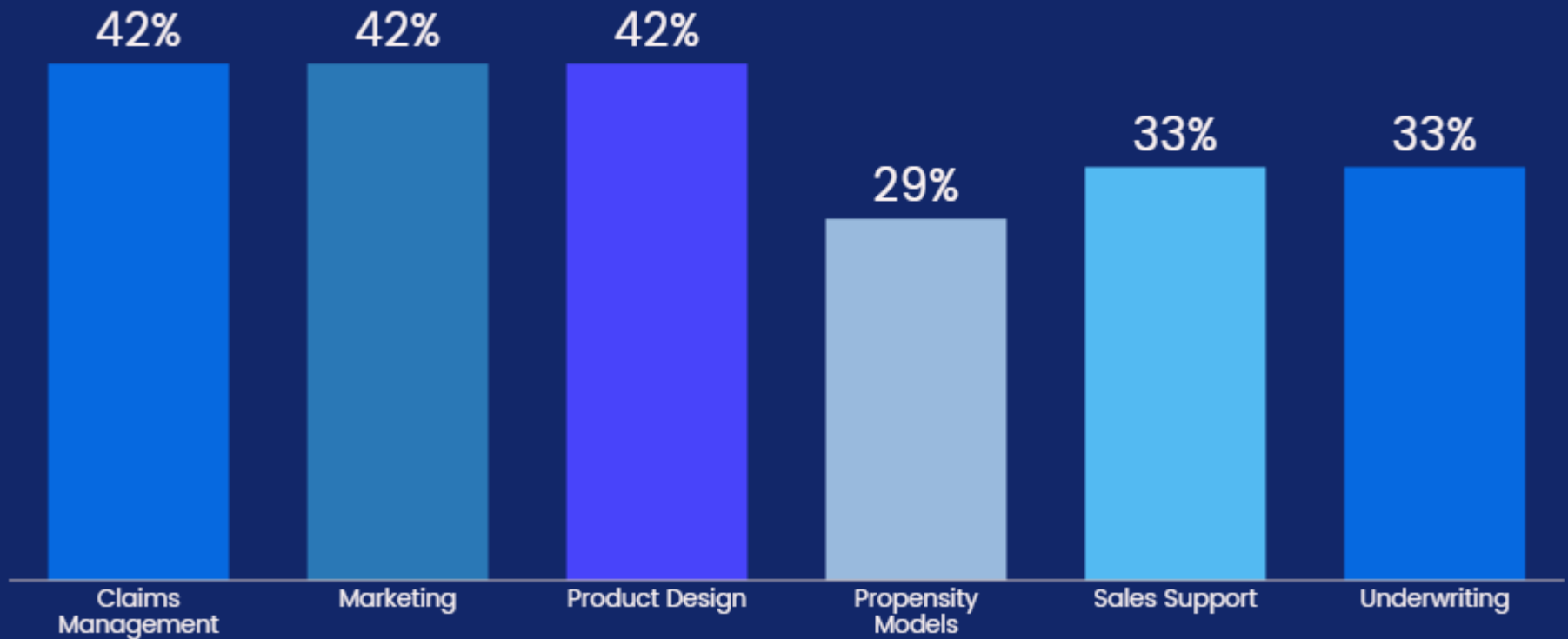
Underwriting
(Individual) risk assessment

The Economist Intelligence Unit conducted a research in which areas insurers see benefits from Big Data.

What are the most important benefits you expect from investments in data and analytics?



What is your company using advanced analytics for?



Big Data in Insurance

Key Challenges

Facebook stopped
Admiral insurance to
price car insurance
based on posts



What are your three main challenges when adopting Big Data?

1

Access to Big Data

Identifying and collecting relevant data sources

2

Big Data Talents

Sourcing of talents around Big Data science

3

Data Privacy and Security

Laws and regulation

4

Legacy Systems

Legacy IT systems and data silos

5

Mind-set and culture

A culture that embraces innovation and change

Data Management

Due to the nature of Big Data: Volume, Velocity, Variety and Veracity

6

Skills and Understanding

Big Data knowledge among staff and management

7

Structure and Processes

Changes to structure and processes

8

Vision

Developing a holistic Big Data vision

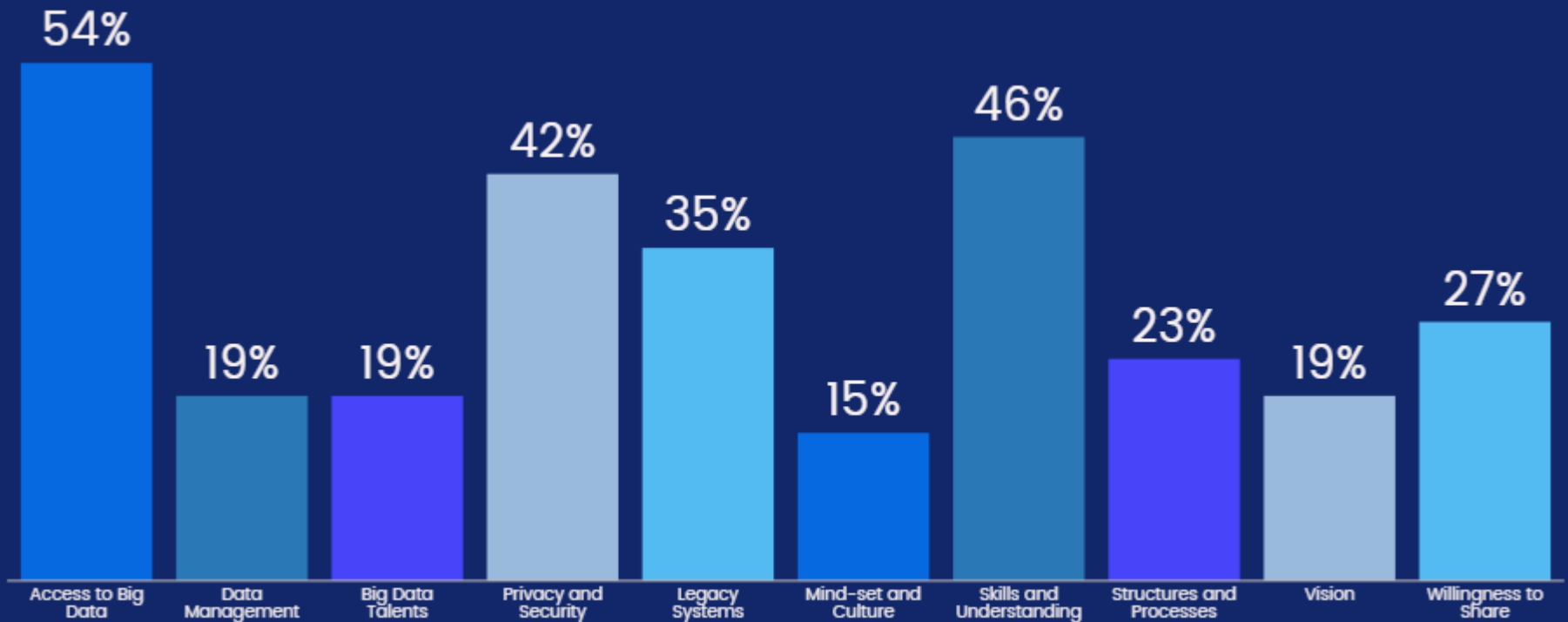
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Willingness to Share Data

Customer and intermediaries willingness to share data

10

What are the main challenges when adopting Big Data?



Access to Big Data: Identifying relevant data sources and collecting data

Quotes from Research

“A challenge is the **availability** of usable datasets and **access** to **relevant data**.”

“In Asia and in insurance ... there is less accessibility of relevant big data because **data sharing, open data**, that's not so easy here.”

“Are **customers willing to share** this data with us? Where is the limit?”

“I think if people become more aware of it that their data can be utilized for commercial purpose, they would be more **reluctant to share** it.”

Access to relevant additional data is important to enrich internal data!

Big Data Talents: Sourcing of talents around Big Data science

Quotes from Research

“Finding those **new professionals in large** numbers is a problem now and will increasingly be a problem. Because not only insurance business, everybody would want data scientists.”

“Unless you are in Singapore or Hong Kong, you pretty much won’t find locals who can do any of this. Even in these countries, because I am based in Singapore, there is a **very limited pool of skilled people** here and **everyone is competing for them.**”

“If you want a talent come into your organization but you are still looking at year old technology, how could they live in that technology? That's a **chicken and egg dilemma**. First talents or first technology?”

Insurers have to compete with other industries for Big Data talents!

Data Management: Due to the nature of Big Data: Volume, Velocity, Variety and Veracity

Quotes from Research

“In the entire world, we got more than three billion GB data per day. So this is really a Big Data. And we need to **improve our infrastructure** which is more on IT side. How we can **store, combine** at a **real time processing**, managing all those data.”

“The second thing is about the **speed of the data** which is generated. In the past the data we are handling can be daily, weekly or even monthly but today with a lot of real time or mobile devices needs to process the data in real time. So how we can **transfer the data** to the different location and then **recall the data** from the different system **in real time**? That is also a big challenge.”

“We have all the online behaviour data and we have the web chat, we have the photo, we have the video. All of them are **unstructured data**.”

The characteristics of Big Data are creating new challenges for data management!

Data Privacy and Security: Laws and Regulation

Quotes from Research

“The more **developed markets** like Australia, Hong Kong, to a certain degree Singapore, I think those markets will be **challenging with the regulators and privacy.**”

“**Data privacy is inevitable** but at the same time we have to be able to get value out of big data. So we have to just work with what we have. **Find practical ways** to do what we have to do.”

“One of the things in general about privacy law, customers have to be **able to correct incorrect data** about themselves. For that they need to have access to it. At the moment, I don't really think that this is happening anywhere in Asia, but that's probably something that **will start to happen** in the next few years.”

Data privacy and security regulations are unavoidable and likely to tighten in the near future.

Legacy Systems: Legacy IT Systems and Data Silos

Quotes from Research

“The insurance industry historically has **not invested in technology**. That goes from every organization I've worked for within the insurance industry.... As a result, we are **not able to capture the data** that we hold within the very own systems.”

“We are undergoing a major change in our platform. We are running on a **platform that's outdated**. That gives us a lot of problems, **not very efficient**. We are moving to a new platform but the **migration** into that platform **hasn't been very smooth**.”

“Right now, even before we're actually using the data, we still having that **challenge in building infrastructure** so that we can **get the data out**.”

An open and future-proof IT infrastructure is mandatory for Big Data implementation!

Skills and Understanding: Big Data knowledge among staff and management

Quotes from Research

“Challenges, I think, will be mainly about people. I think the key challenge that we have now is like we don’t have the people.... In our organization the **level of awareness** and **understanding** of the data is still **very limited**.”

“For insurers the biggest problem ... they’re **very good actuaries** but they are working on **historical models** and they are **not working on ongoing, changing data**, which is massively changing data where you **need to have a science how to analyze** that.”

“Generally speaking, across the insurance business, a lot of **senior managers are struggling with understanding**. Forget big data, they don’t even know why digital needs to be done. If they can’t get their head around even digital, how they are going to get their head around big data?”

Awareness and skill development throughout the organization is necessary!

Mind-set and Culture: A Corporate culture that embraces innovation and change

Quotes from Research

“I think in terms of big data to integrate it and to change the way we use it, that requires over time **changes in mind-set, changes in the way we work** in our organization.”

“With big data you need to consider that data is gold. But today our IT is still thinking that we should delete data because it’s taking space. Still the mind-set that we have, the **mind-set there is completely opposite.**”

“The **cultural change** within the organization is also challenging. People are, I suppose, a bit **reluctant to change.** So from our point of view the technology is the easy part. There are heaps of really good vendors out there, lots of innovation happening in the space.”

Change is not only happening on technology, it is happening first and foremost on people!

Structure and Processes: Organizational change to structure and processes

Quotes from Research

“If we are still using the **traditional structure models** that we have for the past 30 or 40 years, I don’t think that we are going to get the benefit from this.”

“Insurers have very smart actuaries, they have very smart underwriters but it's all the **internal politics** and all the **internal processes** that will **hold the company back**.... Startups, basically are much better placed to do things **quickly** ... they don't have to go through five different processes, approval processes, they don't have to get sign off from global HQ. ”

“Insurers have the millennials coming into their **innovation lab**. They do some brainstorming around new technologies like Big Data, **creating a lot of ideas**, but then it goes into the traditional insurance hierarchy and organization **and it dies**. It just dies.”

Organizational structures and processes need to become more flexible and multifunctional!

Vision: Developing a holistic Big Data Vision

Quotes from Research

“That’s one challenge, the whole theoretical framework that you are trying to develop and trying to **get joint shared ideas** about what Big Data or digitalization is. Because **everybody has their own opinion** and images about this. So, trying to get to a shared understanding is one challenge as a starting point.”

“You must be willing to create a **new pricing model**. This is one of the biggest obstacles right now for insurers. Because insurers **classically building reactive actuarial models....** With Big Data you will be on a **use-based pricing**. So the whole actuarial model plus your own financial background and your investment structure need to change.”

“I think if we really want to achieve a Big Data solution or innovation in a company then first of all **it should start from the top** line, which means management team.”

Insurers are struggling to develop a shared holistic Big Data vision!

Willingness to Share Data: Costumers and Intermediaries

willingness to share

Quotes from Research

“I think if people become **more aware** of it, that their data can be utilized for commercial purpose, they would be more **reluctant to share** it.”

“Agents and brokers, they don’t want the insurer to know much about the clients, because they think that the insurer will steal the client away from them. They want **to control the clients.**”

“Agents ... they are **very private about the data** they have on their customers, so the quality of the internal data we have on customers through the agencies is not as rich.”

Insurers are struggling to get access to data even from their own insurance agents!

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 - 02** Big Data?

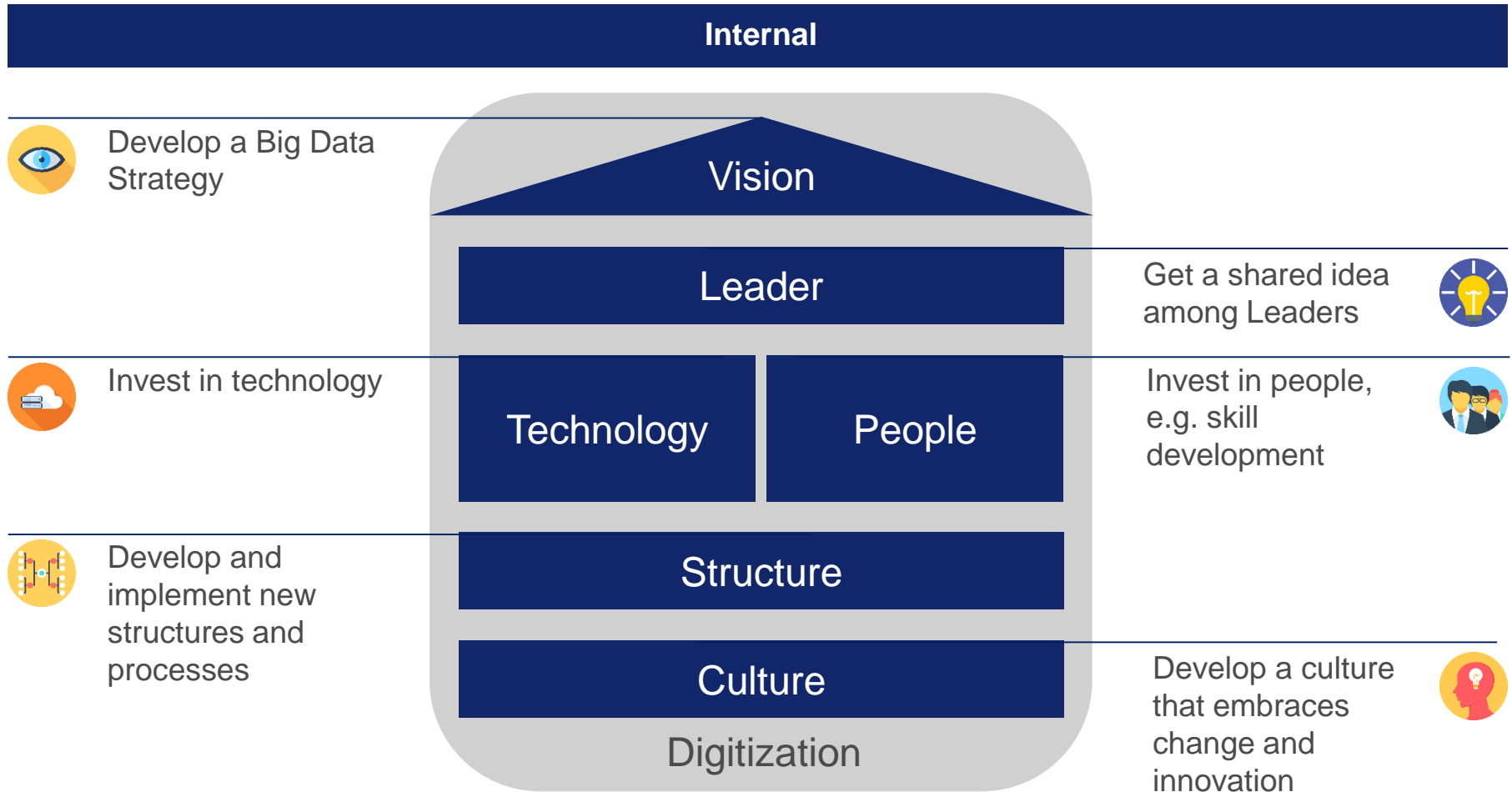
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 - 05** Key Takeaways

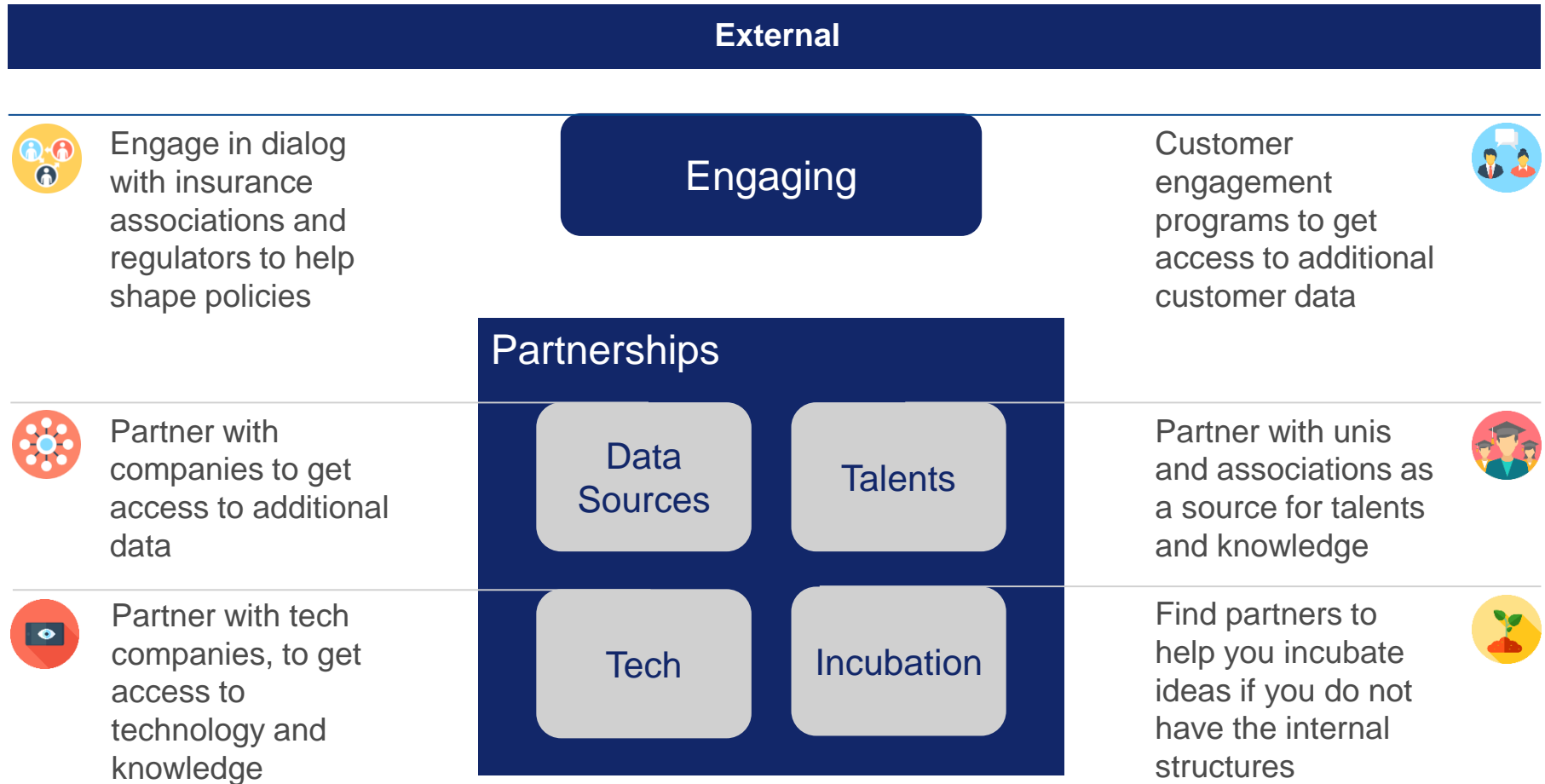
Strategic model for the adoption of Big Data

Internal, organizational strategies



Strategic model for the adoption of Big Data

External strategies



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The insurance industry in Southeast Asia is starting to adopt Big Data.

Key Takeaways

Disruption is happening and Big Data is part of it

Big Data is not only an IT topic and has an impact on the entire organization

Insurers need to develop a culture that embraces innovation and change in order to successfully adopt Big Data

A clear Big Data Vision should be developed in line with a Digital Strategy

Contact us to discuss your digital transformation journey and innovations in insurance.



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