

later by this months.



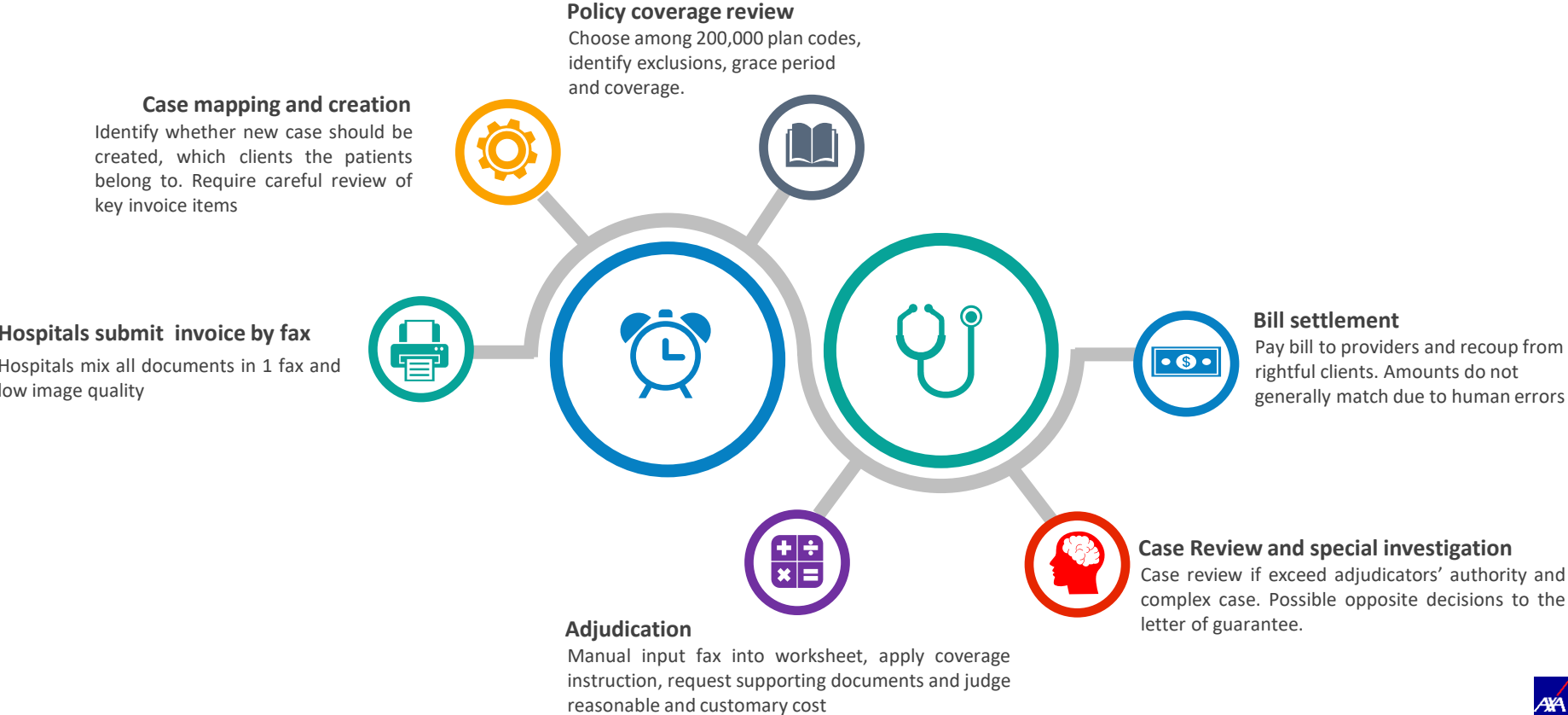
AI for Health Insurance

*COO of AXA Partners Asia
Simon Lee*

September 2020 - Taipei

Segregated, overlapping and manual process

Core driver on non-scalable operation and claim leakage



Operation efficiency enhancement is the fundamental of DTI

Majority of the our operation can be low-value added, repetitive, distractive, and prone to human error



Operation Efficiency

As an operational intensive company, the only viable way to make us relevant to our partners is to scale our operating model by removing low-value manual processing and supporting experts to make best decisions.

Optical Content Extraction

Convert information into readily consumable database




Analog to Digital

The solution extracts information from PDF/pictures, and translate them into accessible database.

Process Automation

Automate highly repetitive process among various software




Data Synchronization

The solution secures all information are consistently exchanged among all systems we operate 24/7.

Digital Concierge

Assist internal and external on common requests



Solve Frequent Request

Top 10 requests cover over 95% of queries. For internal, staff can make a request to look up all previous similar cases

Business Intelligence

Easily assessable facts/statistics to make monitoring effective



Accessible Database

Timely and informed decision can be made With the database synchronized with the most update status and tool that accessible to the database

Operating model enabled by DTI foundation

Incoming documents will be converted into database and entered into system automatically. Process Automation is triggered to set everything ready for adjudicator to review the case. Digital concierge can help agents/members/providers to follow up the status and provide additional documents. It also helps answer internal staff's requests. BI enhances the presentation of facts or statistics for internal/external purposes. In particular, we no longer need to make blind decision.



Data and Technology Innovation

Solution 1: RPA

Result realization: Automate highly repetitive process among core systems

WHY

For **Operation:**

- Most tasks are repetitive, manual, low risk.
- Inputs come from various sources (email, drop files, upload) and in various format (different headers, formats)

For **Business:**

- Not getting service standard on-par with the bar in the industry.



HOW

- Business first, data, AI as support. All solutions are validated by BU leaders.
- Focus on low hanging fruit with partial data team.
- Rely on internal resources to build tailor-made solution that cannot be replicated by competitors
- Utilize state-of-the-art AI and data technology to get maximum efficiency

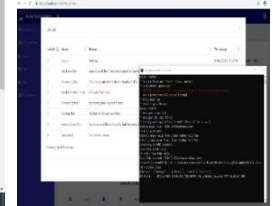
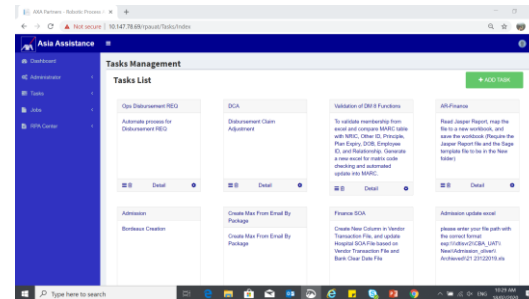
PROBLEM

received **ad-hoc, repetitive** incoming request via email, drop files and web site upload in **various format.**

Agent driven manual process are causing **10%** of omissions error, **80%** of delay and **10%** of wrong update.

Clients' files have **no standard format** and **no backup** if the dedicated agent is absent.

WHAT





Data and Technology Innovation

Solution 2: OCR

Result realization: Liberate adjudicators from administrative routines

WHY

For **Operation:**

- Inputs come in paper/PDF/image format.
- Majority of these information are not captured / Captured by manual read.

For **Business:**

- Slow data capture, not getting service standard on-par with the bar in the industry.

For **Clients:**

- More data, better analysis to understanding better the risk, members' profile, happy customers, and beneficial business partnership with AXA Partnership.

For **members:**

- More data, better analysis to suggest the best medical advice and service when needed most.



HOW

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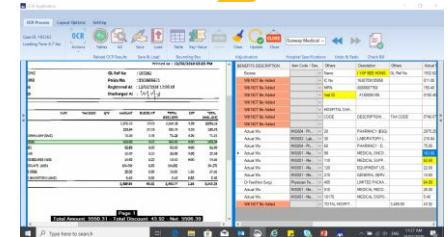
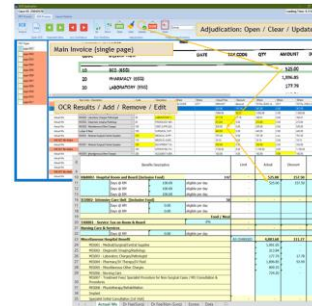
PROBLEM

Eye-balling PDF content, item by item, **manual** copy and paste.

Change between **multiple screens** to retrieve and input data, field by field.

Manual data entry, lead to **error prone** and **slowness**.

WHAT

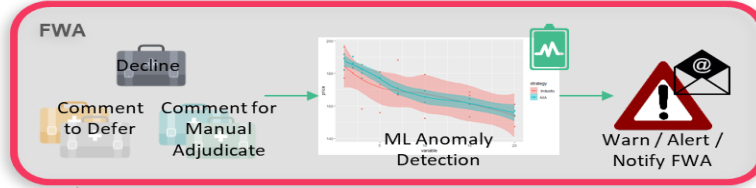
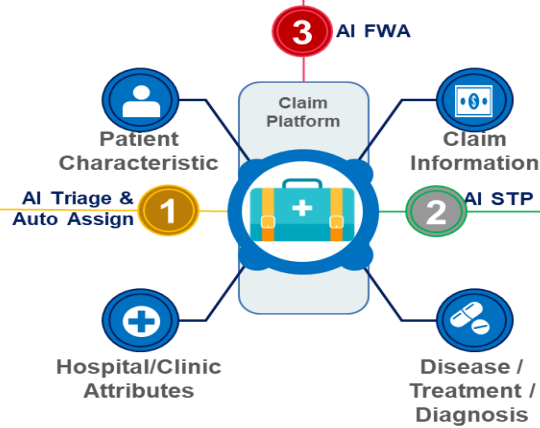
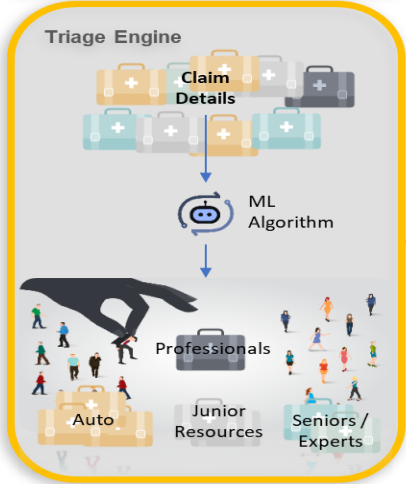




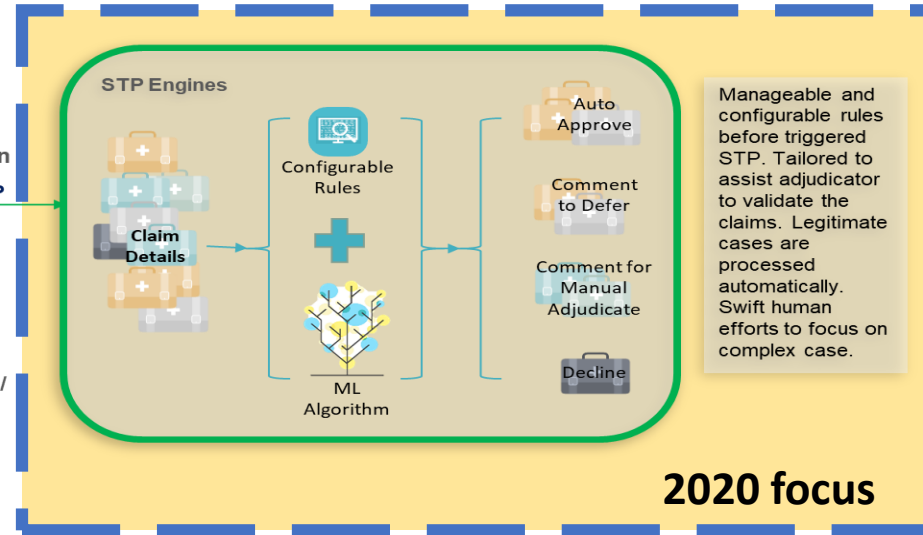
Data and Technology Innovation

Solution 3: STP AI Engine

Leverage AI to assess potential conditions, assign expert to resolve case based on normal / complex conditions.



Through AI-driven modeling, identify fraudulent claims and underwriting irregularities. AI assistance help to identify patterns and suspicious claims.

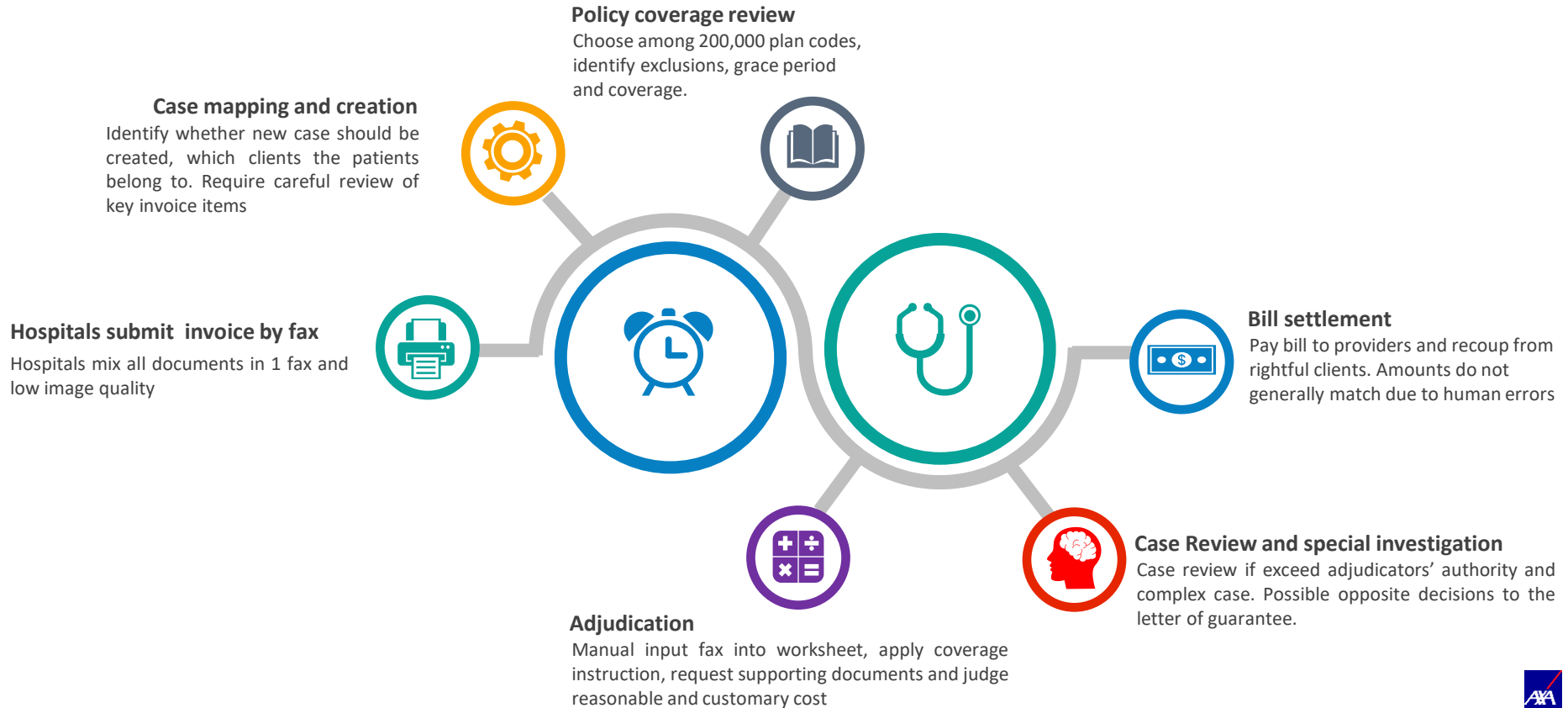


Implementation concept



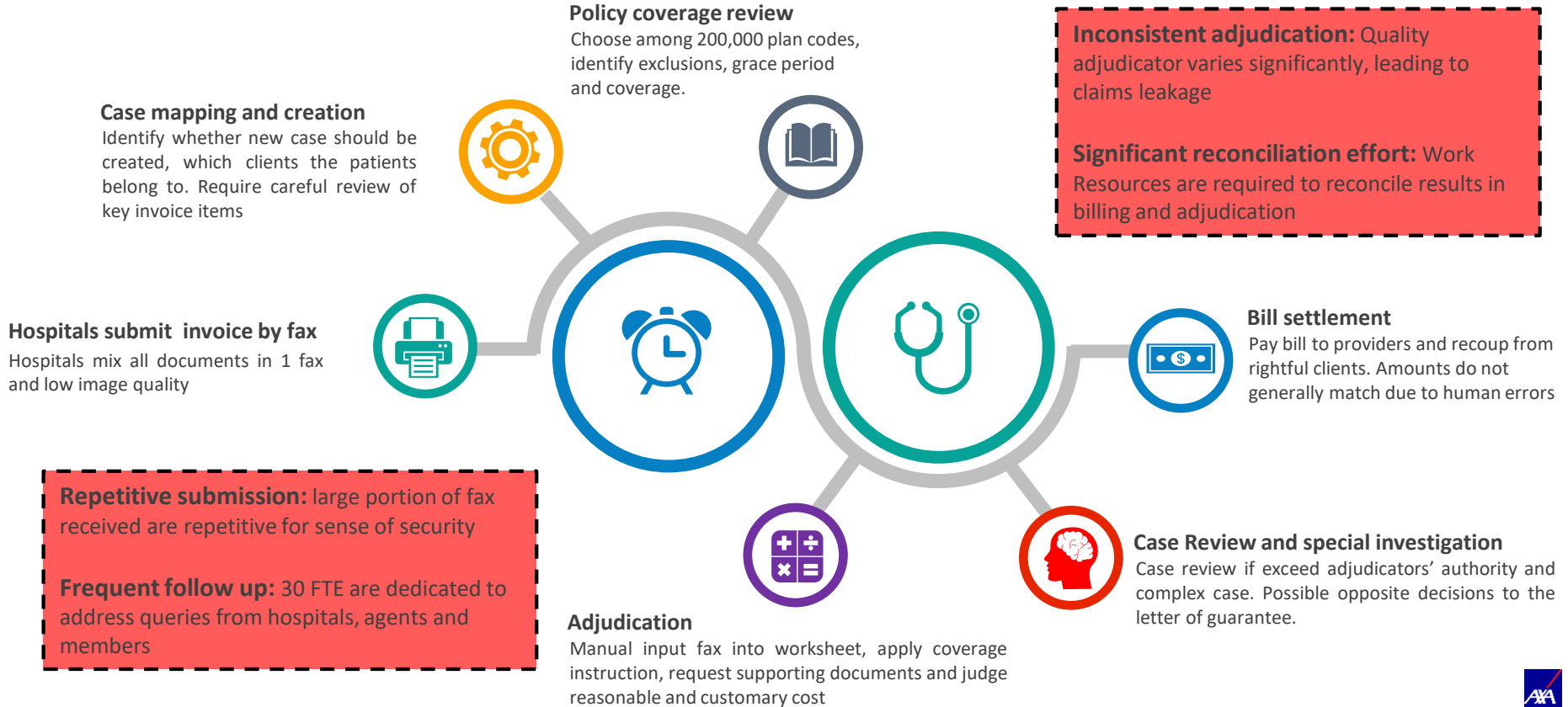
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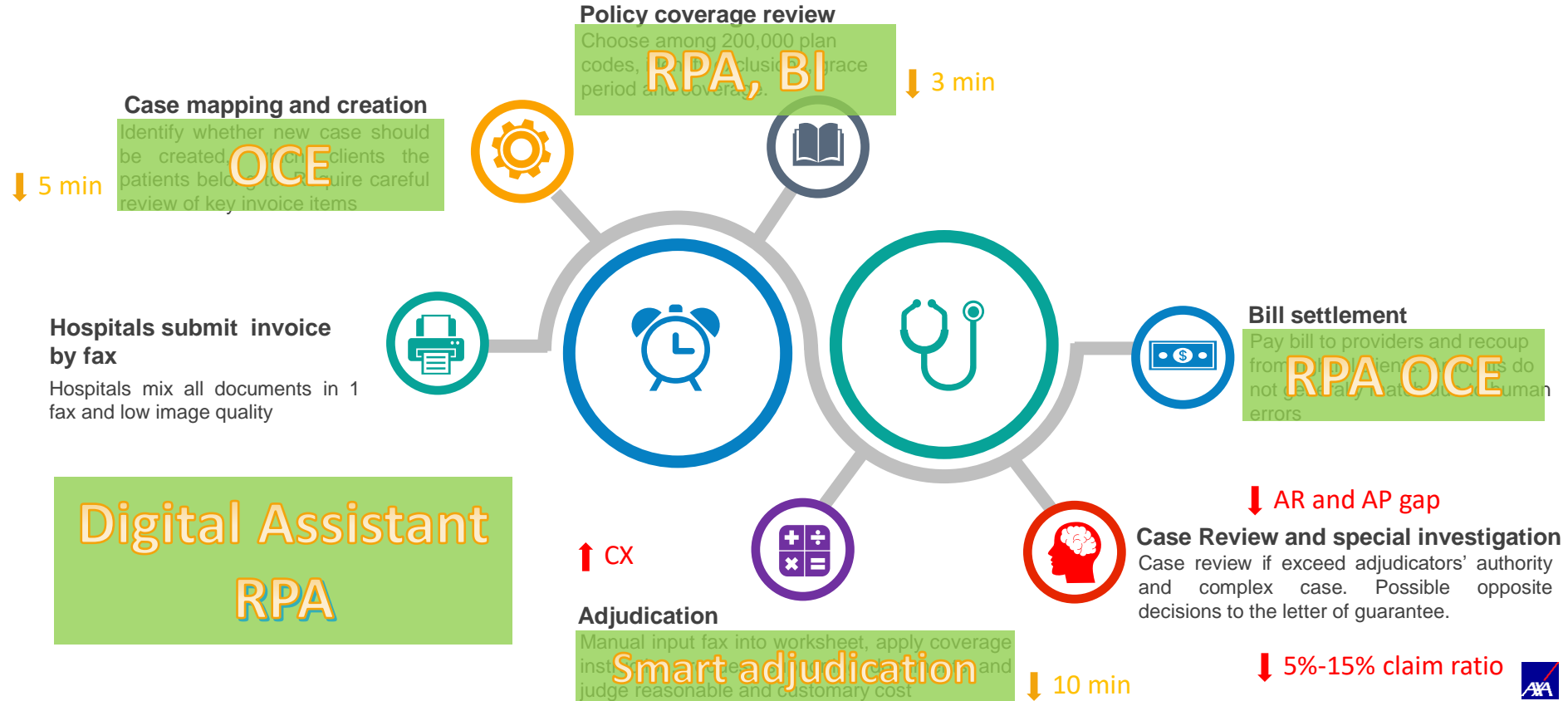
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Segregated, overlapping and manual process

Core driver on non-scalable operation and claim leakage





AI driven digital assistant

Knowledge Base

Search Engine



User



Messaging Platform



Natural Language Understanding



Bot Logic



Information Sources



Data Lake



API from Partners

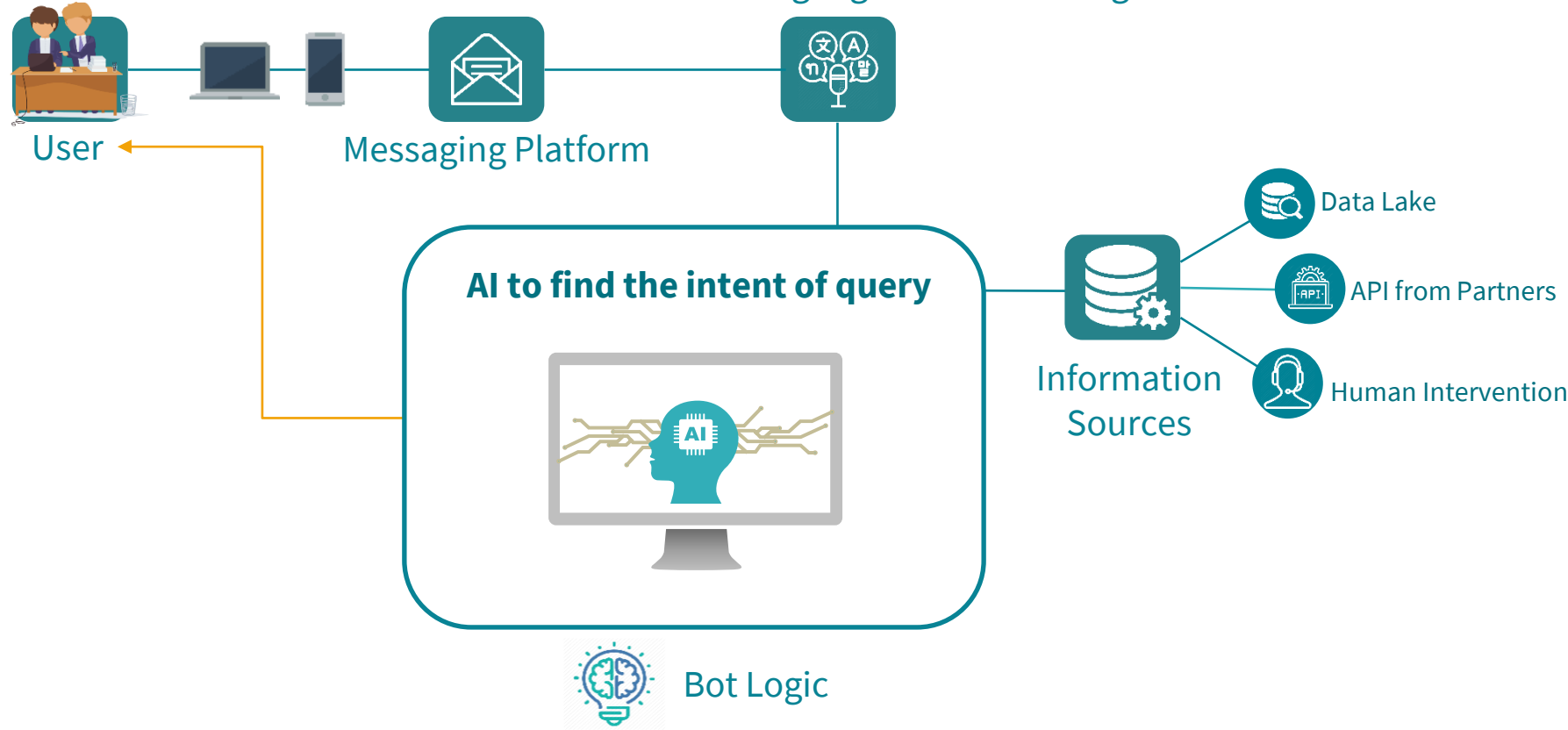


Human Intervention

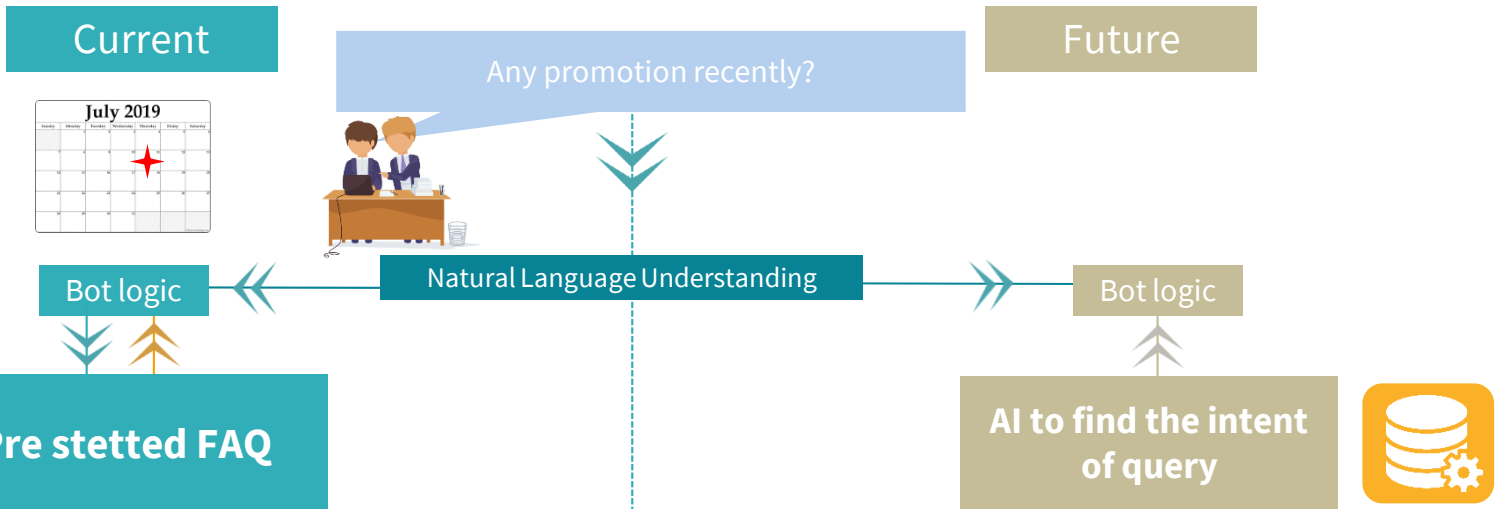
Knowledge Base

Search Engine

Natural Language Understanding



Example



Promotion in July 2019
Purchase any product before 31st Aug,
will have 10% off and the 2 month rebate
for no claims for the first 2 years.



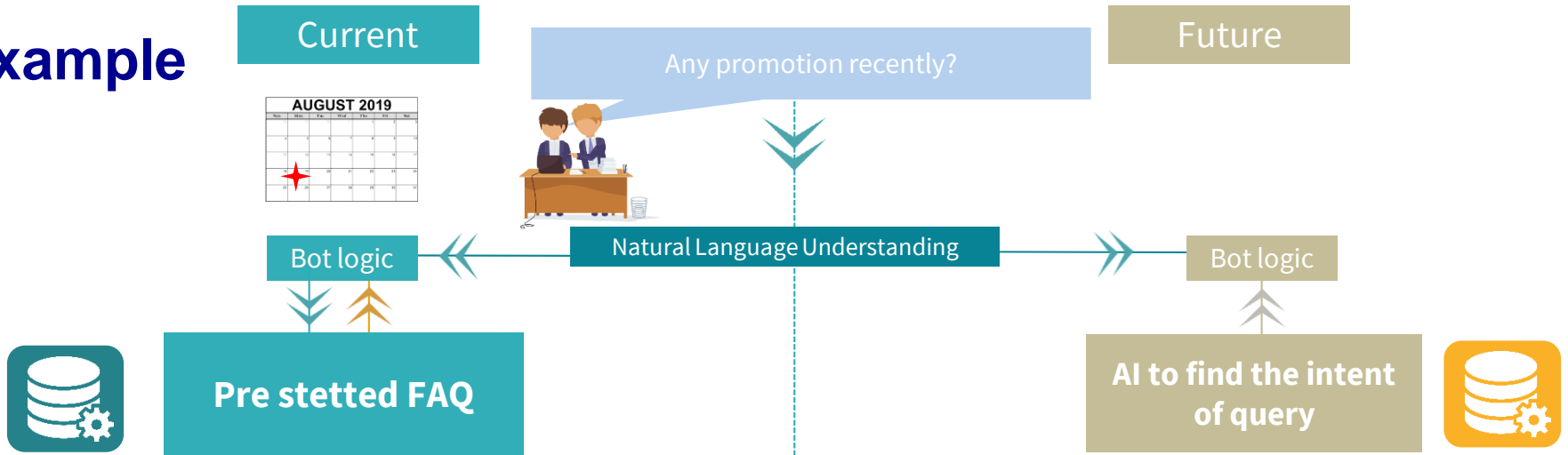
Manually input the answer thus the answer are not updated.

Promotion in July 2019
Purchase any product before 31st Aug,
will have 10% off and the 2 month rebate
for no claims for the first 2 years.

Search from the data base for the newest information.



Example



Promotion in July 2019

Purchase any product before 31st Aug, will have 10% off and the 2 month rebate for no claims for the first 2 years.

Promotion in July 2019

Purchase any product before 31st Aug, will have 10% off and the 2 month rebate for no claims for the first 2 years.

Example

Current

Future

Any promotion recently?



Bot logic

Natural Language Understanding

Bot logic



Pre statted FAQ

AI to find the intent of query



Sorry, we couldn't find the answer.

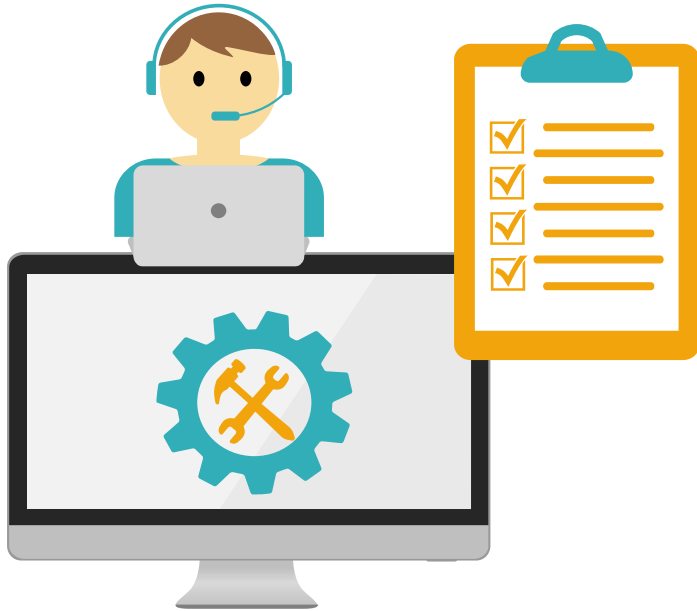
Promotion in July 2019
Purchase any product before 31st Aug, will have 10% off and the 2 month rebate for no claims for the first 2 years.

Year End promotion 2019
For the customer who purchase \$30,000 product before 2019 December, will have \$1,500 rebate.



AI driven underwriting

Data driven automatic underwriting and claim assessment



Improved Customer satisfaction



Fast approval



Reduce leakage and FWA

Data science to drive the orchestration among system, business rules and experts

Most of the policies are underwritten and claims are approved without contest. Underwriters and adjudicators nevertheless need to review the full cases manually. The time spent on those case essentially takes away the time available to evaluate complex case, leading to leakages. Data science identifies cases that are **safe for automatic approval, triage the remaining to the right personnel, provides messages to guide experts to effective investigation**. The main-stream technology of deducing risk from history has proven not successful in underwriting and claims. Below is the core features of the proposed technology

Anomaly detection

Single out cases in question by spotting the deviation from normal pattern. E.g., claims from different cities. Through data science, much more convoluted patterns can be extracted.

AI driven triaging

There is in general strong variance among adjudicators and underwriters. AI mapping between cases and experts will maximize the business values of individuals. A potential of 1-3% of claims ratio saving can result

Real-time self learning

Insurance exhibits strong seasonality, epidemic, trends. Self-learning data science model reduce the potential gap of timeliness of re-training

Network analysis

Analyzing the aggregated patterns at providers, facilities, treatments, diagnosis to establish evidence to FWA. E.g., A clinic coded the cosmetic treatment as medical necessary



Thank You