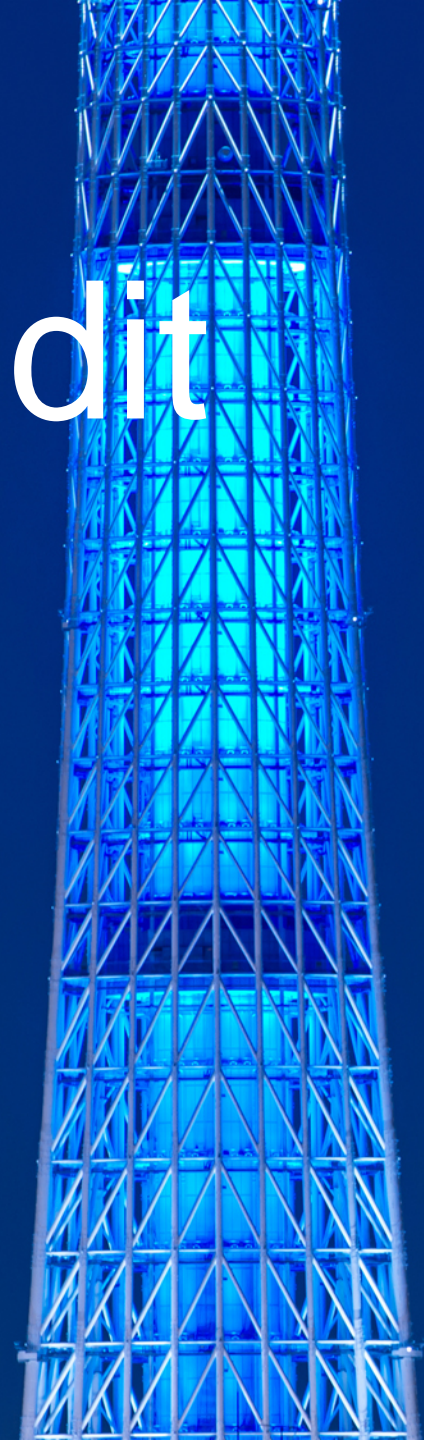**KPMG**

AIG Internal Audit

Underwriting
Practice, Issues, Key Trends

August 6, 2019

With You Today....

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- Managing Director in AIG Internal Audit Group -- General Insurance, primarily responsible for North America businesses – Property, Casualty, Lexington and Special Risks along with managing Global Claims.
- Over 15 years of audit experience across general insurance, investment banking, asset management, and technology.
- Associate in General Insurance (AINS) and Associate in Reinsurance (ARe) designations.

Scott Shapiro
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- Almost 30 years of insurance experience
- 22 years of industry experience at The Hartford in analytics, product, underwriting and field roles
- US Lead for Insurance Risk Consulting
- AIG Advisory Lead Partner

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- US Partner in Risk Consulting and national internal audit insurance sector leader.
- Over 25 years of experience providing strategic internal audit sourcing and risk management advisory services
- Experience providing control optimization, SOX/MAR services, quality assessment reviews of internal audit, amongst other areas in the risk and control space

Content

Objectives

Underwriting Fundamentals

Underwriting / Pricing Process

Underwriting Issues

Key Trends and Disruptors

Internal Audit Considerations

Objectives

The key objective for today's presentation are to introduce the underwriting process and discuss underlying issues and trends.

❑ Present a summary of underwriting's role within the broader enterprise and the insurance value chain

❑ Provide an overview of the underwriting key steps, and raise important connections to other functions and areas across the enterprise

❑ Discuss typical issues in the underwriting function

❑ Review key trends and consider implications in the area of underwriting

❑ Cover potential aspects for Internal Audit to consider when planning / conducting work both within underwriting and in other areas with connection points

Objectives, continued

We want our session to be interactive, with dialogue and involvement from the team. By sharing our experiences and insights, we can learn from each other.

❑ Any other areas of priority to cover?

❑ Additional topics to raise or concepts to share?

❑ Key concerns to raise?

❑ Other points?

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Underwriting Fundamentals

The goal of this section is to establish a common foundation about underwriting, to level-set the audience about the function.

❑ What is underwriting?

❑ Why is underwriting important?

❑ How does underwriting integrate into the enterprise as a whole?
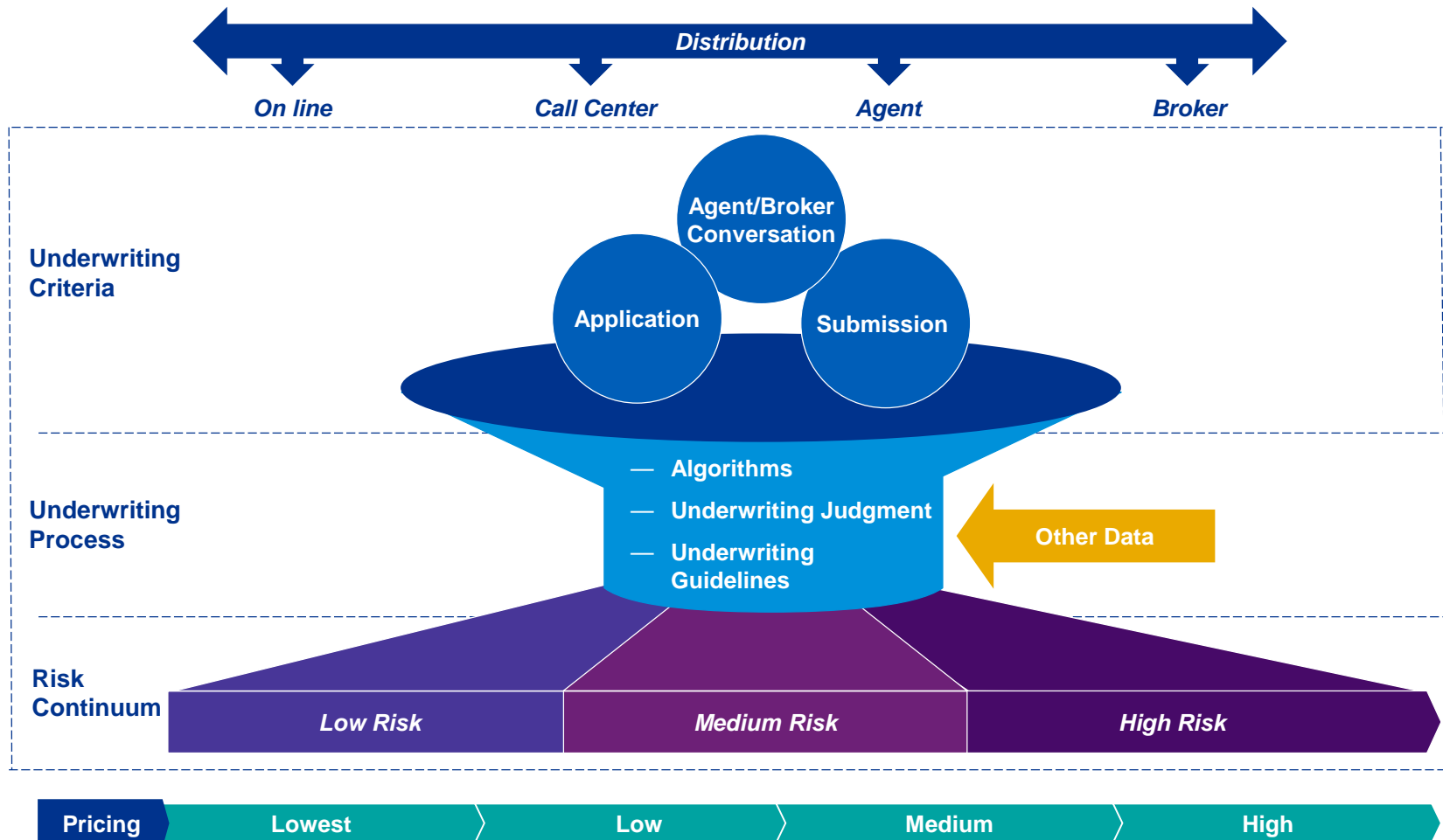
What is underwriting?

Underwriting is an assessment of the known risk factors of the source / applicant in order to determine the appropriate risk rating.

❑ Identifying and gathering upfront information about the key drivers of risk

❑ Evaluating and assessing the risk associated with the applicant:

- Algorithms

- Underwriting judgment

- Underwriting guidelines

- Cognitive learning

❑ Identifying and incorporating additional relevant information

❑ Determining the position on the relative risk continuum

- Micro-segmentation

- Position for pricing

Underwriting Fundamentals, conti

At the core, underwriting assesses exposure and determines the relative risks as an input into pricing.

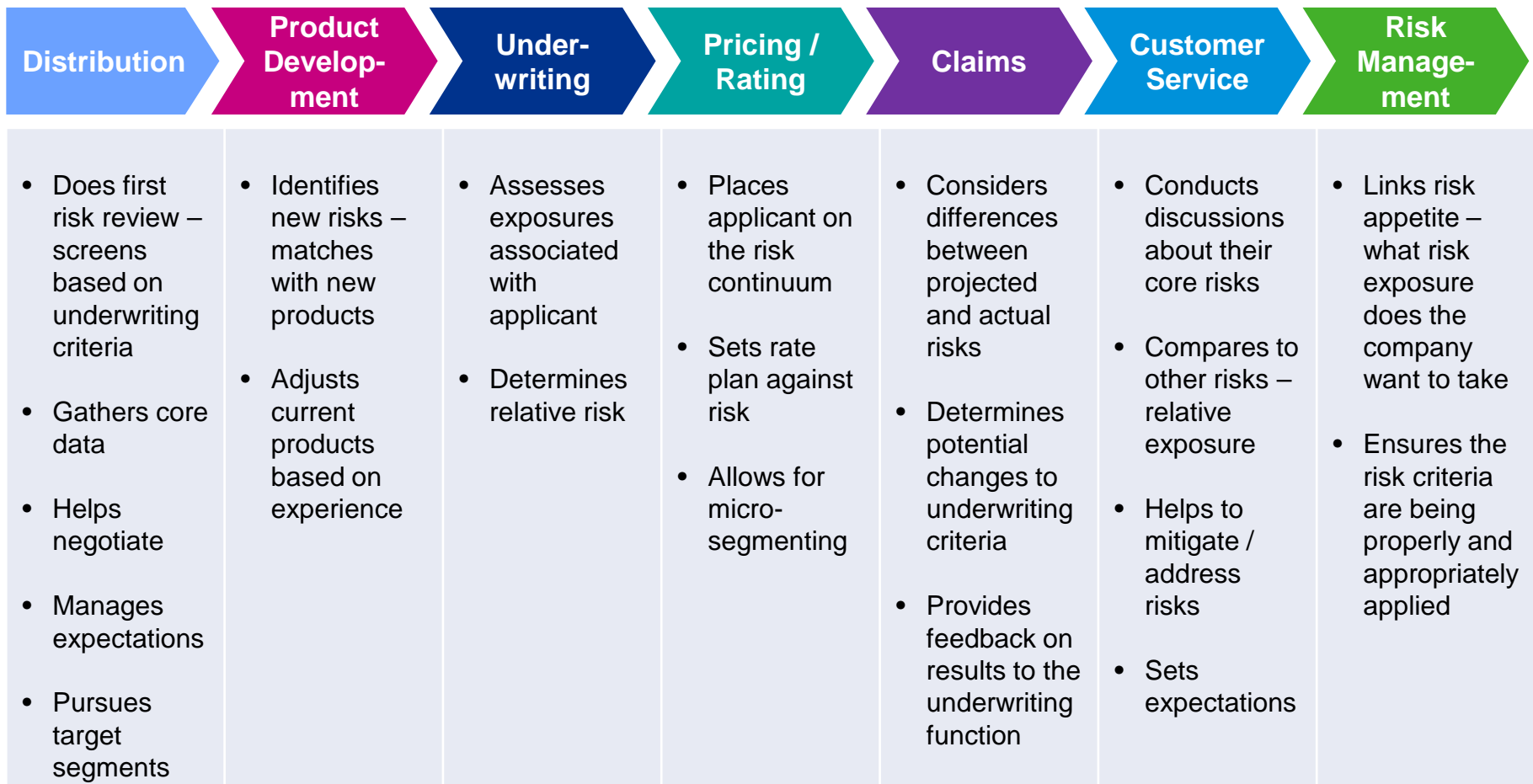# Underwriting Fundamentals, contin

Why is underwriting important?

❑ Is a primary driver of profitability

❑ Determines the inherent risk exposure of the applicant

❑ Allows for the right price for the risk

**Underwriting is one of the few levers that management has that can significantly influence the profitability of a carrier in the near and longer term
(especially in the current low interest rate environment)**
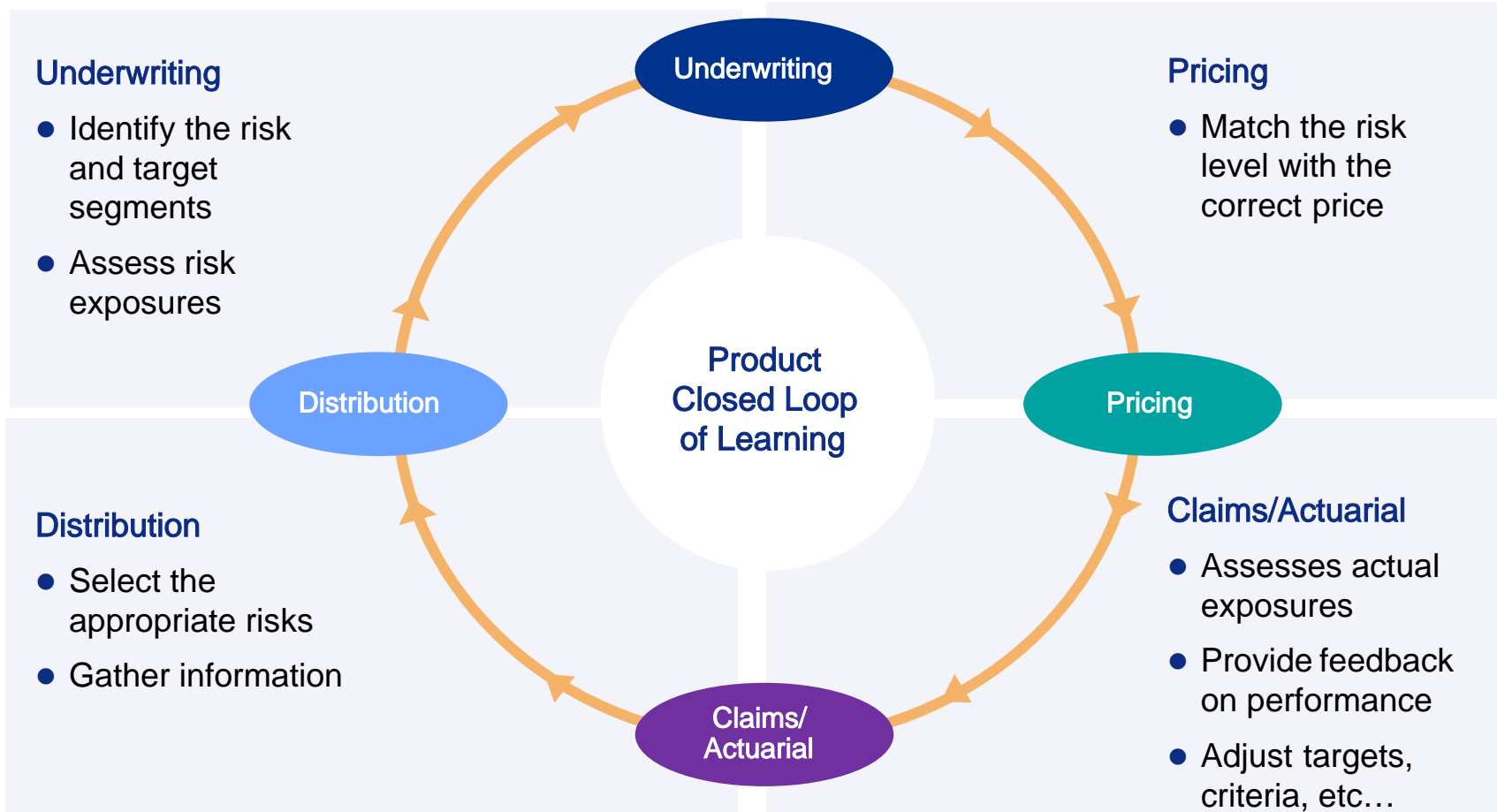
Underwriting Fundamentals, conti

How does underwriting integrate into the enterprise as a whole?

Enterprise Value Chain – Commercial Lines

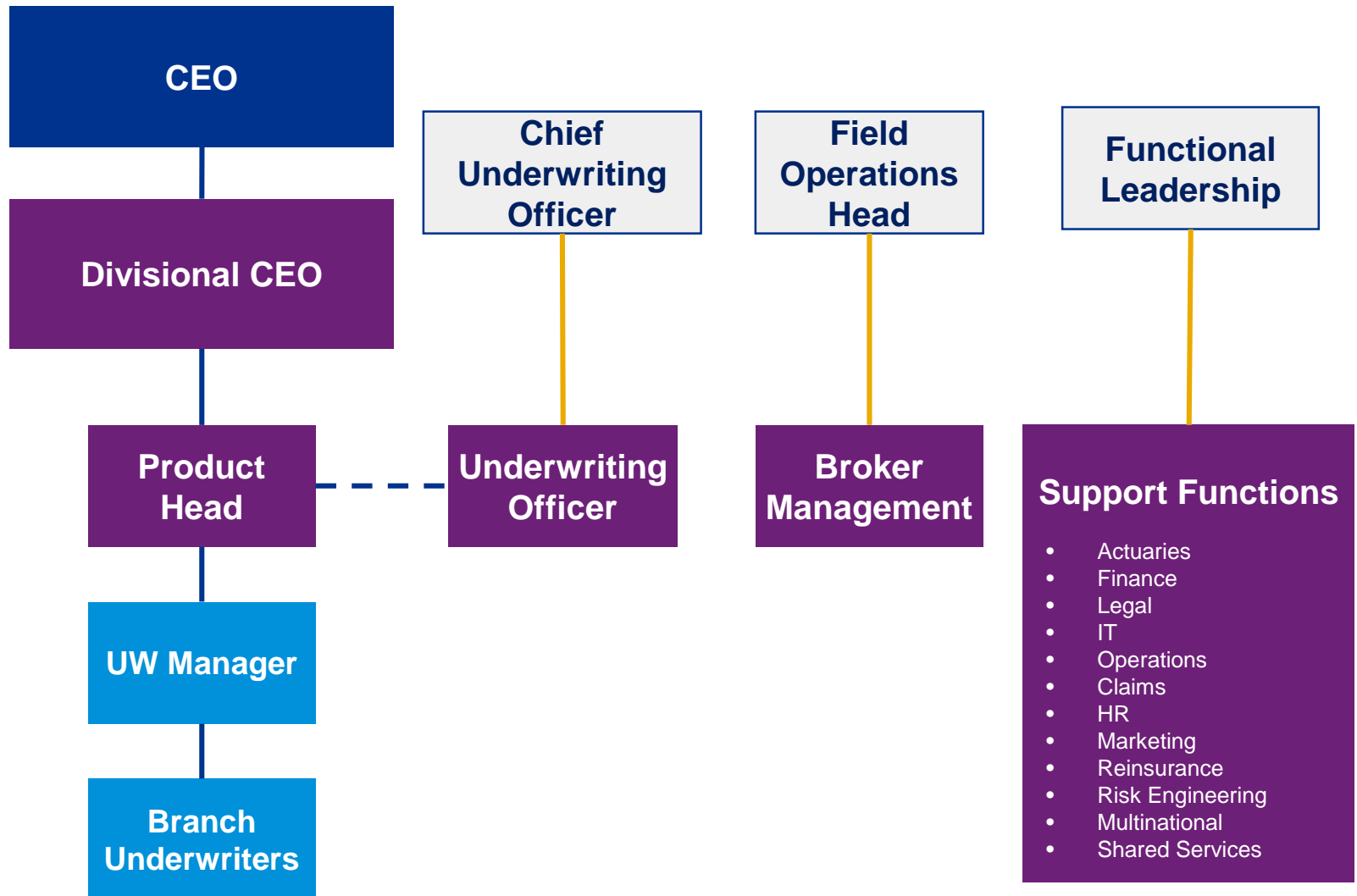| Distribution	Product Develop-ment	Under-writing	Pricing / Rating	Claims	Customer Service	Risk Manage-ment
• Does first risk review – screens based on underwriting criteria • Gathers core data • Helps negotiate • Manages expectations • Pursues target segments	• Identifies new risks – matches with new products • Adjusts current products based on experience	• Assesses exposures associated with applicant • Determines relative risk	• Places applicant on the risk continuum • Sets rate plan against risk • Allows for micro-segmenting	• Considers differences between projected and actual risks • Determines potential changes to underwriting criteria • Provides feedback on results to the underwriting function	• Conducts discussions about their core risks • Compares to other risks – relative exposure • Helps to mitigate / address risks • Sets expectations	• Links risk appetite – what risk exposure does the company want to take • Ensures the risk criteria are being properly and appropriately applied

Underwriting Fundamentals, contin

The underwriting is a core element of a closed loop, where linked-functions learn from the others across the cycle.

Underwriting

- Identify the risk and target segments
- Assess risk exposures

Pricing

- Match the risk level with the correct price

Distribution

- Select the appropriate risks
- Gather information

Claims/Actuarial

- Assesses actual exposures
- Provide feedback on performance
- Adjust targets, criteria, etc…

Underwriting

Distribution

Product Closed Loop of Learning

Pricing

Claims/ Actuarial

Typical Underwriting Organization

CEO

Divisional CEO

Chief Underwriting Officer

Field Operations Head

Functional Leadership

Product Head

Underwriting Officer

Broker Management

Support Functions

- Actuaries
- Finance
- Legal
- IT
- Operations
- Claims
- HR
- Marketing
- Reinsurance
- Risk Engineering
- Multinational
- Shared Services

UW Manager

Branch Underwriters

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Underwriting Process — Value chain

The underwriting / pricing value chain is typically composed of five key elements.

Data Gathering	Screening & Risk Profiling	Premium Generation	Negotiation & Issuance	Book & Portfolio Management

Underwriting Process – Data Gathering

Data Gathering	Screening & Risk Profiling	Premium Generation	Negotiation & Issuance	Book & Portfolio Management
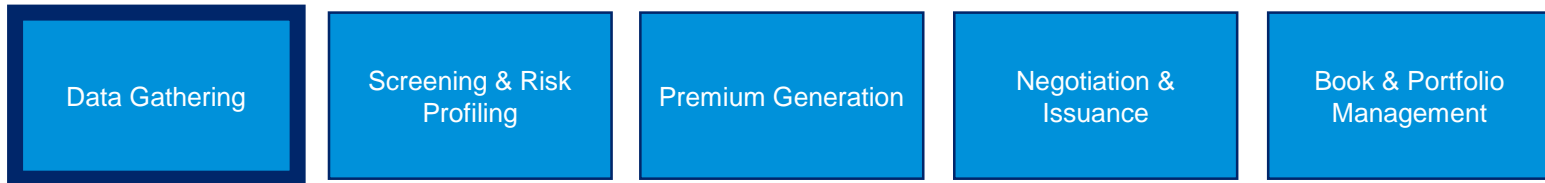
The initial steps relate to gathering information to feed the process.

1. Data Gathering

❑ Interact with broker, producer or customer to understand needs

❑ Complete application request

❑ Validate Information

❑ Obtain missing data and complete application

❑ Submit request to quote

Underwriting Processing and risk pr

Data Gathering	Screening & Risk Profiling	Premium Generation	Negotiation & Issuance	Book & Portfolio Management
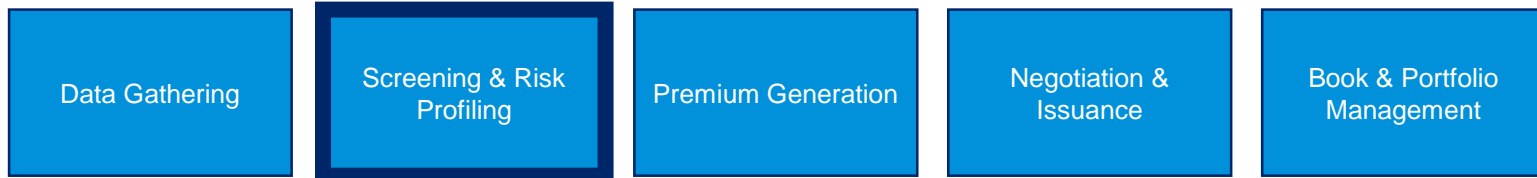
The second set of steps assesses the information, determines the risk and sets relative risk rating.

2. Screening & Risk Profiling

❑ Analyze risk exposures

❑ Identify coverage options; consider reinsurance

❑ Rank the risk

❑ Finalize risk rating and acceptance

❑ Order additional underwriting reports

❑ Update underwriting guidelines / criteria

Underwriting process

Data Gathering	Screening & Risk Profiling	Premium Generation	Negotiation & Issuance	Book & Portfolio Management
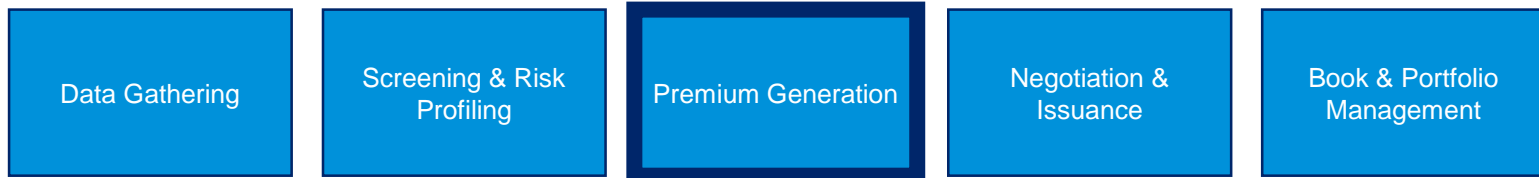
The third set of steps generates a price for the risk.

3. Premium Generation

❑ Do quote calculation

❑ Make discretionary price adjustments, based on information gathered

❑ Finalize pricing

❑ Deliver quote to broker, agent, producer, or customer

Underwriting – Negotiation and issuance

Data Gathering	Screening & Risk Profiling	Premium Generation	Negotiation & Issuance	Book & Portfolio Management
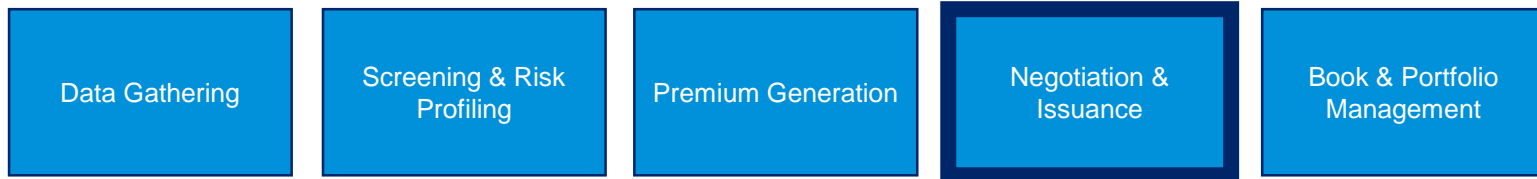
The next steps relate to getting the customer closure on price and binding the policy.

4. Negotiation & Issuance

- ❑ Revisit pricing and negotiation

- ❑ Prepare binder and invoice

- ❑ Get an acceptance or denial from customer

- ❑ Issue policy

- ❑ Update policy administration system / records

Underwriting process Portfolio management

Data Gathering	Screening & Risk Profiling	Premium Generation	Negotiation & Issuance	Book & Portfolio Management
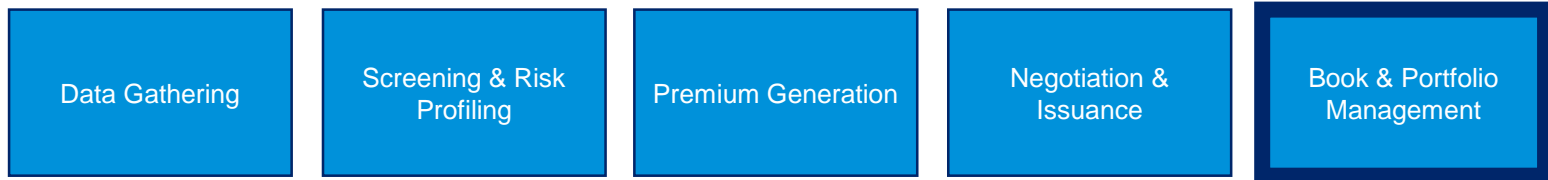
The final steps take a look at the performance of the book, and aim to make necessary adjustments.

5. Book & Portfolio Management

❑ Conduct underwriting Q&A (closed loop)

❑ Revise technical pricing

❑ Do aggregate management

❑ Perform periodic profitability reviews

AIG Strategic Priorities

Improving Underwriting Capabilities

Repositioning Reinsurance Structures

Adding World Class Talent

Driving Efficiencies
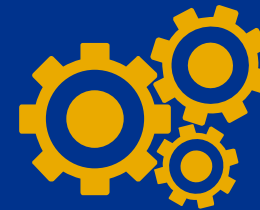
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- Objectives
- Underwriting Fundamentals
- Underwriting / Pricing Process
- **Underwriting Issues**
- Key Trends and Disruptors
- Internal Audit Considerations

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Underwriting data gathering

There are inefficiencies throughout the data gathering process that can cause delays in the overall underwriting process.

Activity	Example Pain Points
Interact with broker, producer, or customer to understand needs	• Fragmented, repetitive and often manual labor intensive processes • Ineffective information exchange between carriers and brokers.
Complete application request	• Extensive and often excessive amounts of information • Data entry and accuracy challenges • Data gathered across the underwriting process is not being monetized (data not leveraged for full insight or information gathered isn't of value)
Validate Information	• Site or potentially insured asset examinations are costly, especially regarding large or complex risks • Data feeds into catastrophe and concentration models and interpretation of results
Obtain missing data and complete application	• Incomplete or additional information • Inefficient follow-up process • Cycle time lags
Submit request to quote	• Queue process routing often leads to inefficient workflow management

Underwriting — screening & risk profiling

The screening and risk profiling process often struggles with information challenges that make it difficult to identify the appropriate risk rating.

Activity	Example Pain Points
Analyze risk exposures or need for reinsurance	• Understanding appropriate risk appetite for new risk(s) or significantly changed risk types • No historic loss information • Limited or inconsistent use of analytics
Identify coverage options	• Identifying best coverage options including terms and conditions is often complex due to different sources and options available
Classify risk as either modeled or referred	• Lacking knowledge and expertise to handle referred risks efficiently. • Modeled risk processing requires the appropriate data, technology and resources to design and adapt models to underwriting needs
Finalize risk rating and acceptance	• Often requires multiple hand-offs, interdependences and different authority levels making timely processing challenging.
Order additional underwriting reports	• Determining complementary information can take time to identify and gather • Challenge to integrate structured and unstructured data
Review updated underwriting guidelines	• Despite good intentions, guidelines and criteria are not often updated based on insights gathered. • Limit exchange of institutional knowledge

Underwriting premium issues generation

The premium generation process battles with complex processes and legacy systems that create inefficiencies.

Activity	Example Pain Points
Quote calculation	• Process usually is restrained by legacy technology constraints • Manual workarounds especially for complex risks or program business.
Discretionary price adjustments	• Process is complex, requires multiple levels of authority and leads to less effective decisions often based on market influences.
Finalize pricing	• Legacy systems and applications cause delays and workarounds to finalize pricing and issue quotes.
Deliver quote to broker, agent, producer or customer	• Often system dependent which lacks efficiency • Quotes are frequently not taken because of market shopping behavior

Underwriting negotiation & issuance

The negotiation and issuance process also suffers from legacy systems and process complexities that cause delays in the underwriting function.

Activity	Example Pain Points
Revisit pricing and negotiation	• Authority levels, regulatory restrictions or profit goals may prevent appropriate negotiation tactics • Inappropriate use of facultative reinsurance (e.g., authority limits, contractual exceptions)
Prepare binder and invoice	• Time consuming, often involving multiple handoffs and burdened by legacy system
Acceptance or denial from customer	• Customer experience varies based on biased broker or producer behavior eventually impacting pipeline of new deals or renewals.
Issue Policy	• Process complexities, legacy system challenges and manual interventions cause delays in policy issuance including the correction of errors.
File completion	• File documentation is a low value after-thought activity for department, but very important for compliance and quality assurance

Underwriting book & portfolio management

The book and portfolio management process is often challenged by the manual nature of the quality assurance activities.

Activity	Example Pain Points
Underwriting Q&A	• Mostly manual in nature, reporting lags often not allowing for timely adjustments or different decision making. • Sometimes ignores critical connection points with underwriting including claims, reinsurance, and product development
Technical Pricing	• Infrequent updates to the pricing algorithm / structure • System updates take time • Structure and rules aren't always followed
Aggregate Management	• Focus on individual risk selection – aggregate / portfolio results not easily / regularly monitored • Aggregate analysis (square the triangle) – need for more granularity • Limited / inconsistent use of analytics
Profitability Reviews	• Infrequent or ad hoc discussions • Not all stakeholders – underwriting, claims, pricing, channel – involved • Limited follow through to changes to guidelines, criteria or pricing

Common Issue Themes Across Al

Ineffective Underwriting Supervision

Lack of Data Quality and Availability

Inadequate Technology Infrastructure

Unclear Accountabilities

Ineffective Model Risk Management

Inadequate Performance Incentives

Inadequate Oversight of Third Parties

Audit Considerations Underwriting

Oversight & Governance

- Underwriting Strategy & Org Structure
- Guidelines
- Authorities

Distribution	Submission	Account Analysis/ Quote	Binding	Booking	Issuance	Post Bind
• Commissions • Licensing	• Reservations • Sanctions Screening	• Risk Selection • Rater usage • Reinsurance Placement • Quote Letters	• Binder Wording • Subjectivities	• Policy coding	• Policy Wording	• Mid-term Adjustments • Cancellations

Portfolio Management

- Management Reporting
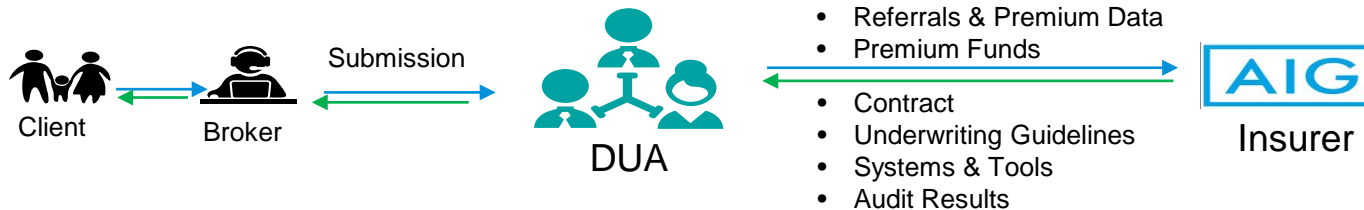- Feedback Loop

Quality Assurance

- Peer Reviews
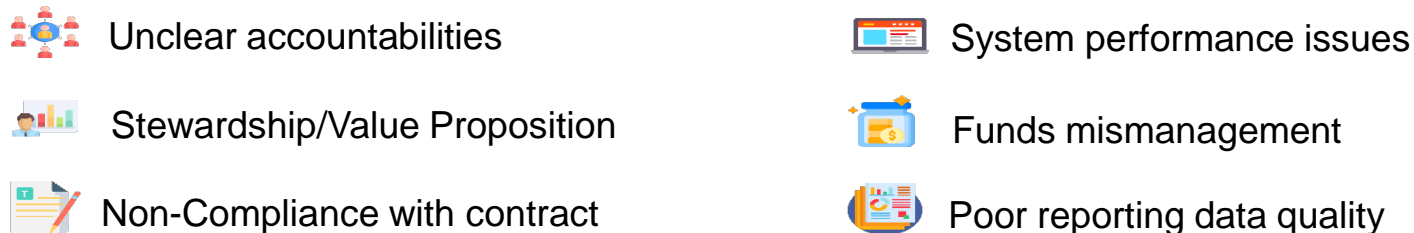- Underwriting Quality Reviews

Portfolio Management

- Third Parties
- Models and End User Tools
- Credit Risk
- Data Protection

Audit Considerations – Third Party Underwriting

Typical Life Cycle

Client ← Broker — Submission → DUA

- Referrals & Premium Data
- Premium Funds

← AIG (Insurer)

- Contract
- Underwriting Guidelines
- Systems & Tools
- Audit Results

Unique Risks

- Unclear accountabilities
- Stewardship/Value Proposition
- Non-Compliance with contract
- System performance issues
- Funds mismanagement
- Poor reporting data quality

Audit Toolbox

- On-site audits
- Desktop reviews
- Quality assurance audits
- Financial viability reviews
- Technology reviews

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Objectives

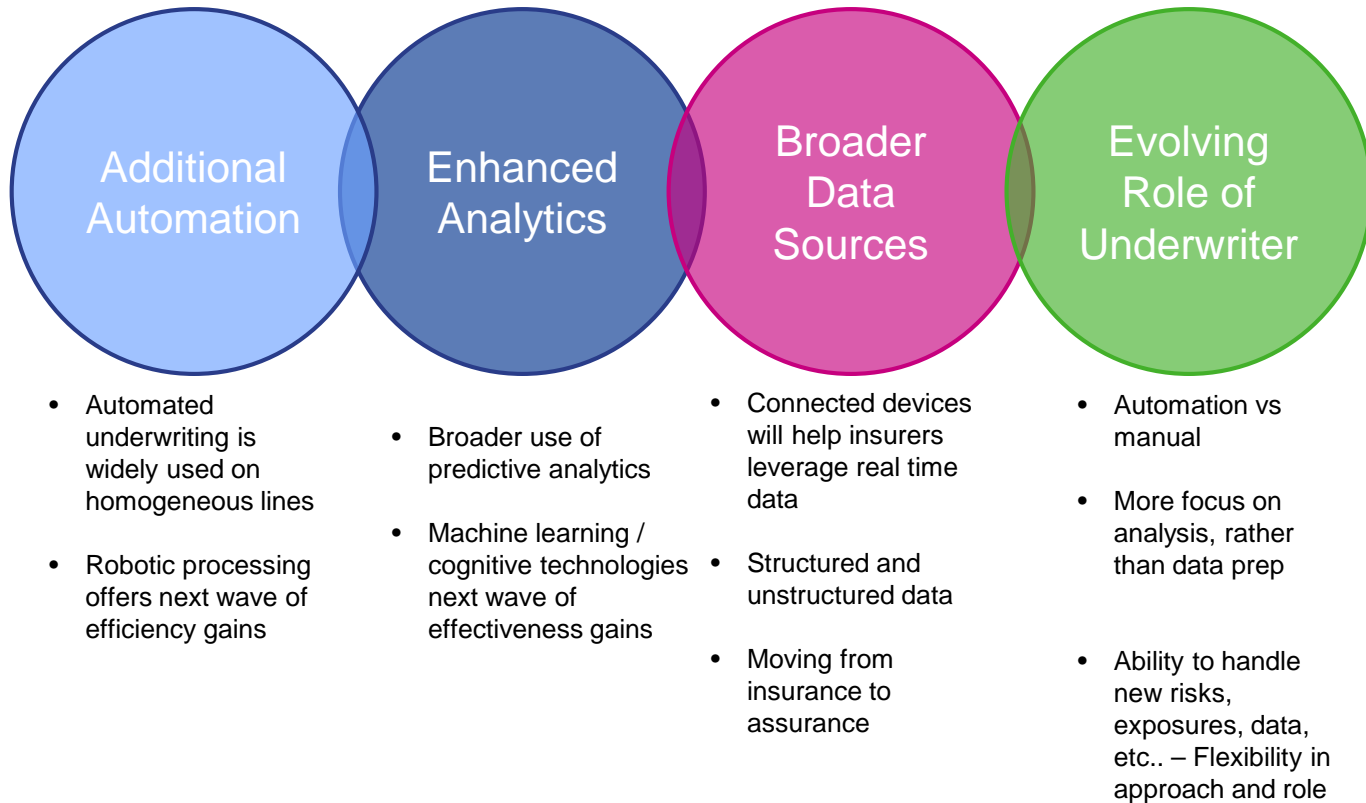Underwriting Fundamentals

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Underwriting – Key trends

New technologies will be deployed across the underwriting value chain to help create a more flexible and efficient workforce and delivery platform.

Additional Automation

- Automated underwriting is widely used on homogeneous lines

- Robotic processing offers next wave of efficiency gains

Enhanced Analytics

- Broader use of predictive analytics

- Machine learning / cognitive technologies next wave of effectiveness gains

Broader Data Sources

- Connected devices will help insurers leverage real time data

- Structured and unstructured data

- Moving from insurance to assurance

Evolving Role of Underwriter

- Automation vs manual

- More focus on analysis, rather than data prep

- Ability to handle new risks, exposures, data, etc.. – Flexibility in approach and role

Underwriting automation

Breadth and depth of automation is expanding due to new technologies.

❑ Automated underwriting is already used extensively across simpler, more homogeneous lines – personal auto, commercial auto, BOP, etc… Ability to directly feed external data – MVRs, credit reports, etc.. – link with application and account data

❑ Straight through processing rates are generally 95%+ with minimal underwriter involvement. Companies are using a combination of custom and software underwriting platforms such as Guidewire

❑ Move into more complex lines of business

❑ Use of robotic process automation (RPA) for simple, repetitive tasks in the underwriting process.

❑ New tools to help better prep data – gather, aggregate, cleanse, package

Underwriting — stronger analytics

Predictive analytics helps to identify trends and exposure drivers to better assess risk and set price.

❑ Broader use of predictive analytics across all lines of business. Helps to identify risks and spots trends. May also lead to loss mitigation services.

❑ New software and tools helping to advance efforts (including catastrophe modeling).

❑ Machine learning / cognitive computing is a potential next wave of analytics. It can potentially provide underwriters with feedback for continuous improvement over time and empowers them with important details regarding: data aggregation, risk calculation, quote generation, and customer interaction.

❑ Current implementation: A leading reinsurance company assesses risk with the help of cognitive computing and improves the underwriting process by leveraging unstructured data by partnering with IBM Watson.

Underwriting – enhanced, broader data

The underwriting process is being revolutionized by an influx of new data sources.

❑ Connected devices in smart homes / factories, such as web connected smoke alarms, sensor and other technology help reduce potential claims by identifying hazards in advance.

❑ Wearable devices have given underwriters access to an unprecedented amount of data on customers lifestyle supporting better risk classification.

❑ Underwriters are leveraging data from social media sources to better understand their customers behaviors and preferences.

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Underw_{ritihger} Internal Audit Consi

Other risk and control matters raised by internal audit during the underwriting process:

❑ Information Protection – What are the guidelines or limitations on the nature and extent of the information gathered? What is the responsibility of the organization for protecting and/or using the information?

❑ Underwriting Judgment – What are the permissions/authority levels of the underwriter and how can they be circumvented? How are they monitored and enforced? An example includes an underwriter using facultative reinsurance to accept a risk, but exposed organization to policy limit beyond firm's risk tolerance (e.g., increased credit exposure to reinsurer)

❑ Data – How is the completeness and quality of data being assessed and categorized for use in the underwriting process? As more data including unstructured data is utilized are there safeguards to prevent over/unsubstantiated reliance?

❑ Digital/RPA – Lack of collaboration between stakeholders including understanding roles and responsibilities including importance of establishing objectives and business requirements (e.g., motives with unintended consequences).

Thank you

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