

# PERSPECTIVE

## Commercial Insurance – Coming of Age for Automated Underwriting



– Muthukrishnan Nagarajan

### **Abstract**

A well-debated concept over the past few years has been the benefits that can be unlocked through automating commercial underwriting. Higher underwriting productivity, faster cycle times, and lower costs are promises that lie at the end of the rainbow.

This paper takes a closer look at the path to underwriting automation and deployment of true straight through processing (STP) solution in commercial insurance.

## Introduction

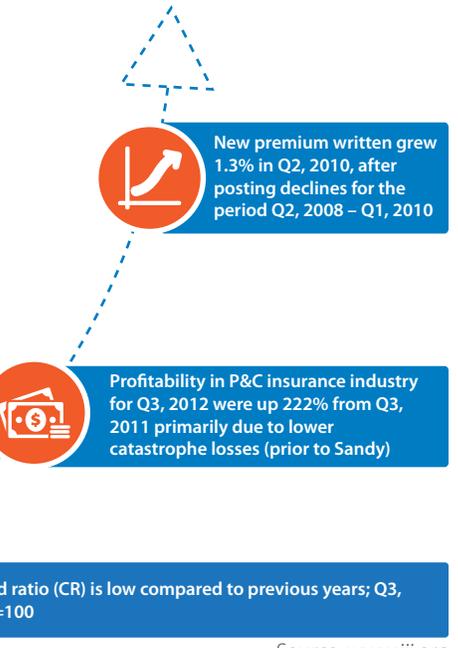
Property and casualty (P&C) insurance industry was set back by large catastrophic losses (Hurricane Sandy) and a soft market in 2012. P&C insurers struggled to improve their combined ratio (highest in three decades; combined ratio (CR) of 106.4% in 2011, and CR of 100% in Q3, 2012, before Sandy losses)<sup>1</sup>, as they witnessed record low interest rates, lower investment earnings, and intense competition.

Even as the market is firming up, underwriting profitability remains a cause of concern due to higher claims frequency across several lines of business. Underwriting losses through Q3, 2012 totaled to US\$6.7 billion whereas catastrophic losses in 2011 led to the highest underwriting loss of US\$36.5 billion, the largest since 2001. Commercial lines underwriting performance in 2011 with a CR of 110.2% was the worst since

2002. The underwriting performance in commercial lines continues to suffer well into Q2, 2012 (CR-102.5% forecast) though the net premiums written grew by 4.2% in Q2, 2012 vs. similar period previous year.<sup>2</sup>

Large underwriting losses are NOT sustainable in the present investment environment where the returns are lower. One of the key challenges facing the industry is the cost and time for

commercial insurance underwriting. Insurers increasingly feel the need to automate underwriting, especially high volume, low value, simple risks. Instead,



Source: [www.iii.org](http://www.iii.org)

underwriter's bandwidth should be effectively utilized to review complex, high value risks, and cross-sell / upsell activities to ensure topline growth.

## Challenges in Automating the Underwriting Processes

The path to automating commercial underwriting is filled with challenges, such as frequent changes to underwriting rules, complex pricing, products, and risk selection. Insurers across the world are faced with the following common questions before embarking on automation process:



Business

- What are the types of risks and products to be considered within the portfolio for automated underwriting process?
- What level of complexity is involved while determining premium?
- What level of automation should be incorporated into underwriting decisions?
- What level of delegated authority am I comfortable with?
- Should I implement process improvement across new business, underwriting (rating, business rules), claims and distribution channels before automating the underwriting process?



IT

- What IT (systems, technology) and people investments are needed for automation?
- Will existing systems (e.g. front end, CRM, claims) with policy administration system (rating, rules, UW) seamlessly integrate to provide a straight through processing (STP) solution?



Organization  
change  
management

- What could be the impact on underwriters and underwriting support teams due to the implementation of automated underwriting solution?
- What level of training should be imparted to stakeholders (internal and external)?

<sup>1,2</sup> P/C Insurance Industry Overview & Outlook, A Story of Growth and Strength in an Uncertain World: New York Society of Securities Analysts, New York, NY, March 18, 2013 ([www.iii.org/presentations](http://www.iii.org/presentations)), Robert P. Hartwig, Ph.D., CPCU, President and Economist, Insurance Information Institute

## The Case for Underwriting Automation

Insurers have limited ways to grow profitably in this market. In cases, where growth is directly tied to insurer's ability to underwrite profitably, and react quickly to competition and market demands, insurers are investing across business rules management, rating, front end, and product configuration tools.

### Catalyst for change

Pathbreaking insurers are now taking advantage of improvement across

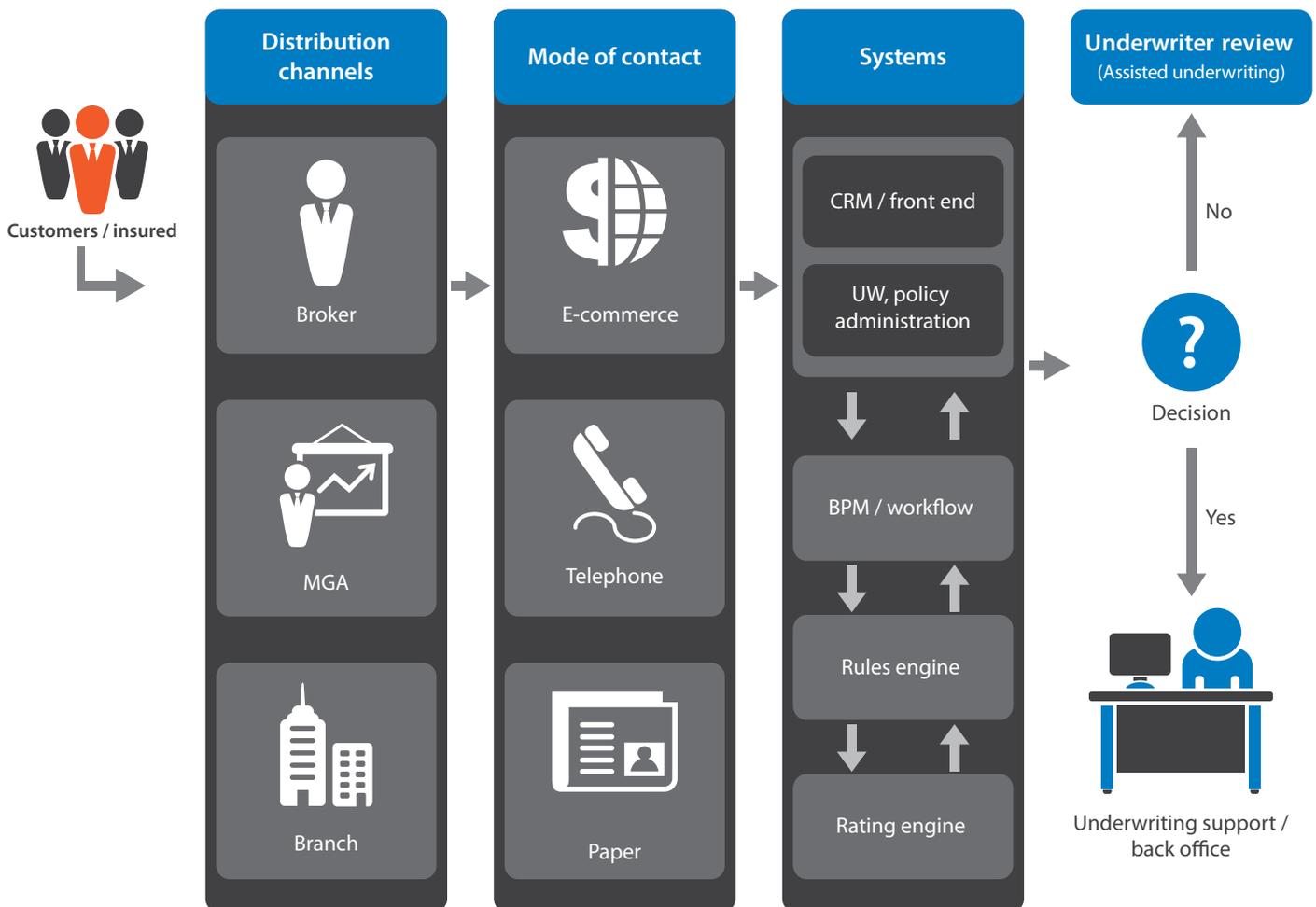
the following areas to automate underwriting processes:

- Business processes (e.g. simple, fewer processing steps /screens and absence of multiple handoffs from application, quote-to-policy production)
- Product innovation (e.g. less complex, packaged commercial insurance policy for small and medium enterprises, policies tailor made for businesses

(hospitals, retailers etc.) and group insurance products that involve simple underwriting process)

- Technology-based solution approaches (e.g. business rules engine, rating engine, and straight through processing (STP) solution)

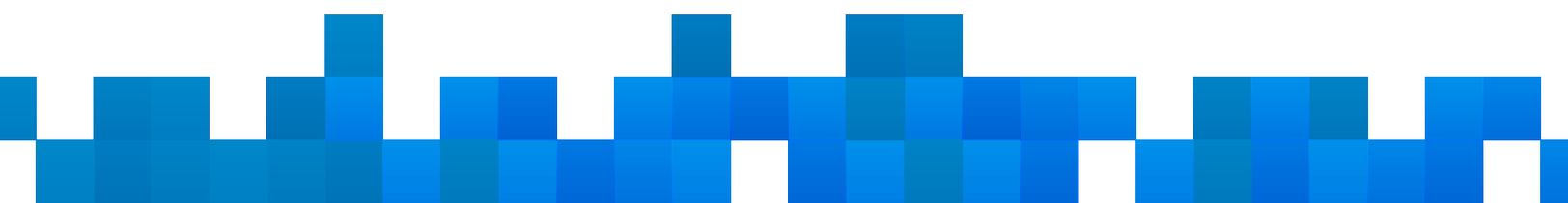
Underwriting automation has proven to be an effective approach to enhance business across dimensions



STP-based underwriting process

Some of the value enhancers of automated underwriting are mentioned below

Levers	Value delivered through automation of underwriting process
Revenue and profit	<ul style="list-style-type: none"> <li>Reduces turnaround time for quote and policy issuance</li> <li>Additional lead / sales realized at a lower incremental cost</li> <li>Profitable underwriting (due to tighter controls across rating / business rules-based underwriting)</li> </ul>
Operational cost	<ul style="list-style-type: none"> <li>Eliminates underwriter's manual effort involved in assessing simple risks; which in turn can be utilized to assess complex risks and activities that increase topline</li> <li>Significant reduction in manpower, application maintenance, and operational cost</li> <li>Reduction in cost of acquiring customer</li> </ul>
Innovation and transformation	<ul style="list-style-type: none"> <li>Ability to quickly configure / clone and introduce insurance products, rates and business rules-based on the type of brokers, seasonality and market condition</li> <li>Be competitive in terms of pricing (e.g. independent rating systems)</li> <li>IT and business teams are clearly able to understand the business rules causing maximum exceptions and tweak accordingly (deeper understanding of market and client requirements)</li> </ul>
Agility	<p>Helps insurers to:</p> <ul style="list-style-type: none"> <li>Reduce time-to-market for quote and policy issuance</li> <li>Condense underwriting time (quickly assess risks, estimate the exposure (already made) across lines of business, and provide quote)</li> <li>Quickly react to market conditions (e.g. pricing), regulatory changes, or business rule changes</li> </ul>
Adaptability / ease of doing business	<p>Increased broker / MGA / customer satisfaction due to:</p> <ul style="list-style-type: none"> <li>Higher placement due to short cycle time</li> <li>Consistency in decisions / pricing</li> <li>Quicker realization of premium</li> <li>Less effort on administration</li> <li>Technology superiority</li> </ul>
Employee / broker retention	<ul style="list-style-type: none"> <li>Ability to attract new underwriters and MGAs / brokers (superior service)</li> <li>Ability to retain current staff</li> </ul>
Quality and constancy	<ul style="list-style-type: none"> <li>Tighter control on underwriting process, rates, pricing, discounts, and approval authorities</li> <li>Service standards above industry average</li> <li>Consistent communication and processing to all stakeholders</li> </ul>
Outsourcing / offshoring	<ul style="list-style-type: none"> <li>Enables ease of outsourcing / offshoring as the process has less handoffs and becomes amenable to straight through processing (STP)</li> </ul>



## Dynamics of Automated Underwriting

Though there is a strong case for automation of underwriting processes, the vagaries of commercial insurance (mentioned below) ensures that insurers adopt automated underwriting based on the type of risks, products, markets, and maturity of end users.

### 1. Risk and products

Personal, motor, travel baggage, home owners, and personal accident insurance, which typically have less complex business rules, rating, and homogeneous nature of risks make them more amenable for automated underwriting. In fact, over the past few years several insurers have accomplished the task of automating the underwriting processes across these simple risks.

Pioneering insurance companies have gone one step ahead, improvised, and designed complex commercial insurance products that are suitable for automated underwriting. For example:

- A leading UK-based commercial insurer has launched a packaged / bundled product (14-18 risk segments – such as property, machinery breakdown, contents, fidelity, motor, etc.) aimed at small business segments. The product has been launched on an e-commerce platform to be accessed by brokers for automated underwriting.
- A leading Middle East-based P&C insurer has launched products aimed at specific industry / professional segments – such as hospitals, retailers, etc. Brokers can access these products over internet and provide quote as well as book, bind and issue policies

However, insurers are well aware of the challenges involved in automating the underwriting process, across middle

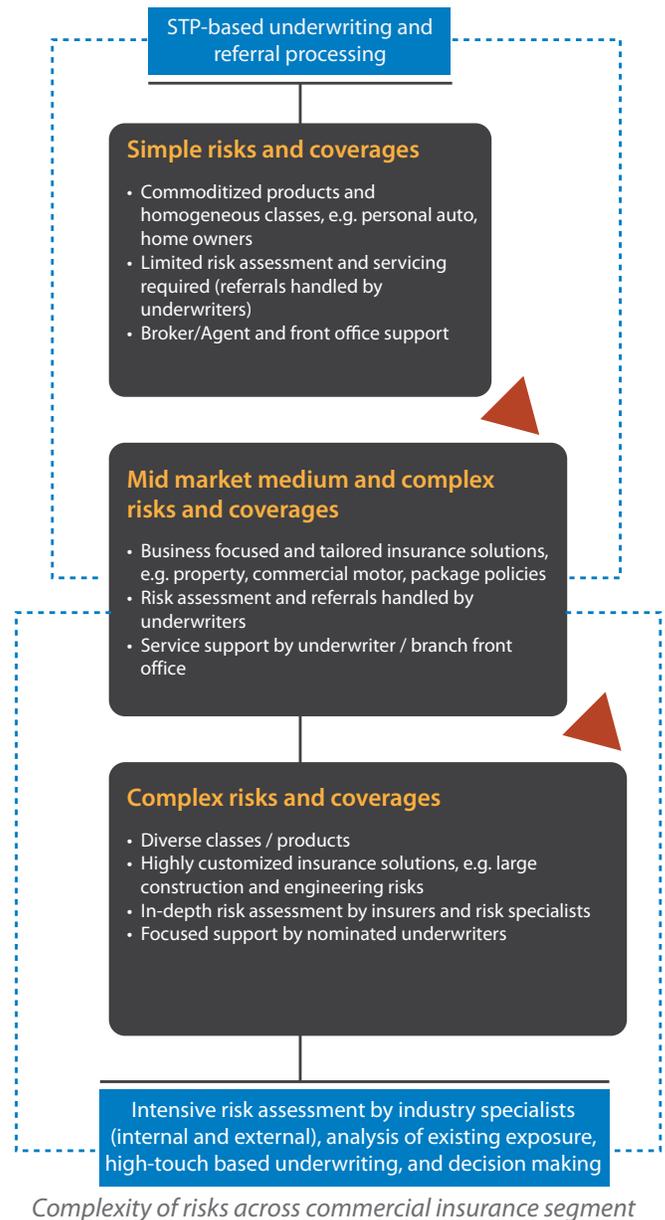
market and large, complex commercial insurance risks. These segments present unique challenges that require analysis and judgment by underwriters, risk assessors, and involve processing steps that are more complicated. For example, while insuring an oil pipeline, industry specialists need to evaluate for geo-political, flood, and catastrophic risks, underwriters need to determine the amount of exposure they can take, reinsurance and co-insurance requirements and evaluate customer's financial and business strengths. Some of the middle market and large commercial insurance segments have high-touch manual underwriting, and do not lend themselves to straight through processing (STP)-based underwriting process

### 2. End users

Besides the risk type and products, the maturity of end users (e.g. brokers / MGAs / insurance company front office desk) is crucial to determining the success or failure of automated underwriting. It is equally important for the insurance company to invest significant effort towards educating and training the end users on automated underwriting processes to achieve the desired objectives.

### 3. Market

Most importantly, the market has to be mature to accept products that involve minimal amount of manual underwriting.



## Impact of Business Rules Engine (BRE), Rating Engine and Business Process Management (BPM) Tools on Automating Commercial Underwriting Practices

Today's underwriters face an onerous task of making the right risk selection, faced with pressure of pricing and competition. Underwriting automation with the help of business rules engine / product and sophisticated rating engine has proved to be a blessing in disguise, to make real-time decisions, prevent unauthorized approvals / underwriting, and ensure compliance with corporate and industry mandated practices. Rules engines are being widely adopted and proven to be effective in reducing underwriter's effort, making quick informed / insightful decisions, and improving business performance.

Insurers are increasingly opting for standalone business rules and rating engine, that can be accessed by internal and external applications, instead of tying them to an application (e.g. embedding business rules and rating engine in policy administration system). Modern day business rules engines (both commercial and open source) provide a host of features

that allow users to efficiently create, clone, manage and execute business rules.

Typically, in a commercial insurance underwriting process, the business rules engine works in tandem with front end, rating engine, BPM and claims systems. The business rules engine is the first application that validates the inputs needed to underwrite the risks, received from front end systems (customer relationship management (CRM), policy administration system (PAS), and agent portal, etc.). Based on the validation of business rules, it then allows the data to be passed on to the rating engine to produce the premium (new business). In case of renewals, endorsements or cancellations, the business rules engine also needs to interact with claims systems.

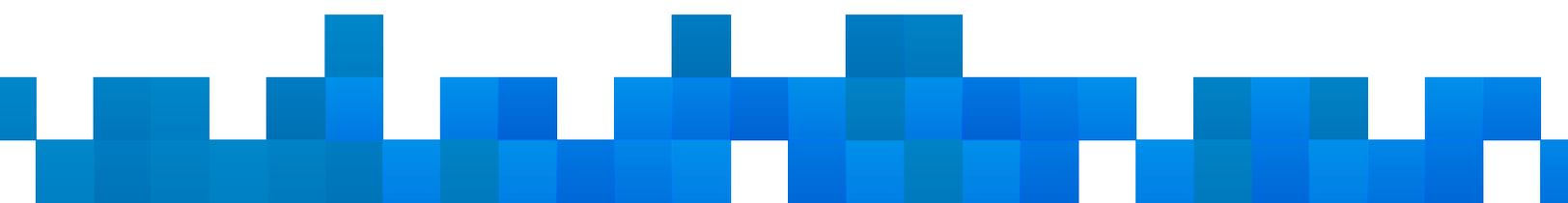
Apart from improving the financial results and turnaround time (TAT) to provide a quote, automated underwriting has enormously helped the insurers in reducing

operational costs of administering the policies, through effective offshoring / outsourcing of underwriting support/ back office processes. Being an STP-based underwriting process, insurers are able to take advantage of minimal or no handoffs and approvals required in the entire process of administering the policies. Case in point are the initiatives undertaken by a leading UK-based commercial insurers to administer new business, mid-term endorsements (MTA), and renewals data emanating from broker-based applications in policy administration system. In order to effectively implement the business rules management solution, Infosys believes it is critical to create an architectural blueprint of implementation and maintenance approach for each of the business rules set and rules.

The table mentioned below highlights the complexity and details involved in creation and implementation of business rules to support underwriting automation.

Managing routine work	Support for making underwriting decisions	Price / rate determination
<ul style="list-style-type: none"><li>• Business rules to validate form filling and trigger exceptions processing</li><li>• Exceptions are triggered as referrals to underwriters and senior managers (within broker institution)</li></ul>	<ul style="list-style-type: none"><li>• Risk and coverage assessment rules</li><li>• Rules on limits, deductibles, commissions, etc.</li><li>• Dynamic questions</li><li>• Cross-sell / upsell rules</li><li>• Total exposure determination rules</li></ul>	<ul style="list-style-type: none"><li>• Decision on premium basis the quality of risk (and accordingly prompt the rating engine or underwriter to rate up / down the cases)</li><li>• Ability to determine the premium based on no claims discount</li><li>• Decision to underwrite the risk or renew the policy based on loss ratio calculations</li></ul>

However, the implementation of business rules engine and integration with applications is not without challenges. It is very critical to maintain business rules discipline; simple rules set and rules architecture to allow for easy maintenance and fast response.



## The Way Forward

Commercial insurers need to take advantage of the technology innovation, innovation in insurance products, and improvement in business process to simplify and automate underwriting across small and medium complex risks. To attain the next level of sophistication in automated underwriting processes, insurers should be able to:

- Identify and eliminate common set of referrals / exceptions in an underwriting process, incorporate them into the business rules to increase the percentage of STP-based processing,

and achieve improved pass-through results. For example, if there are higher number of claims in commercial motor risk across a particular model / make, that insight (loss history) needs to be incorporated into rules and rating engine for proper risk selection and adequate pricing (rate up / rate down / reject the case)

- View their entire risk exposure across lines of business to make informed decisions. For example, based on the amount of risk insured in a particular zone / area, the business rules

engine should be able to prompt the underwriter on the total exposure in that particular zone / area before issuing the policy

- Apply intelligence to underwriting process by inculcating the insights derived from underwriting to improve the processes involved in risk selection, underwriting, creating products, and rate making



## About the Author



**Muthukrishnan Nagarajan,**  
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Muthukrishnan has over 13 years of experience in designing IT, BPO solutions for global Financial Services and Insurance (FSI) firms. Focused on commercial insurance segment, he has been involved in designing turnkey solutions comprising of core insurance application, business rules and rating engine and satellite applications (HCM, CRM, actuarial, financial and investment management, etc). Recent experiences include automating the underwriting process of small and medium enterprise (SME) products for a leading P&C insurer. The initiative involved evaluation and selection of rules engine, rating engine, and designing the process and application for STP-based underwriting.

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