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AUTOMATION TECHNOLOGY SERIES: PART 1

INTELLIGENT AUTOMATION

DRIVING EFFICIENCY AND GROWTH IN INSURANCE

SERIES INTRODUCTION

Advances in digital technologies, data & analytics capabilities, and agile development methodologies are transforming the way insurance companies operate, and serve their customers and the markets in which they compete. Automation of traditionally manual processing is one application of this type of technological advance that is critical in driving operational efficiency, a superior customer experience and retention, and stronger and faster business intelligence that enables better decision making.

This series takes a closer look at three types and areas of automation technology: data capture, robotics process automation (RPA) and cognitive robotics. Insurers are applying – or are developing the capabilities to apply – each of these levers to improve operational efficiencies and customer experiences.

The force applied to each lever will vary according to the carrier's organizational structure, types of processing, and numerous other factors. Nevertheless, a holistic approach to automation that makes use of all three levers is key to becoming a successful insurer of the future.

This report – the first in a three-part series – focuses on data capture. Parts two and three will cover RPA and cognitive robotics.

ACCELERATING THE EFFICIENCY OF INSURANCE DATA CAPTURE

Data collection has been at the heart of insurance business processes since the birth of the industry. As insurers advance into the digital age and tackle the vagaries of reshaping business processes to increase success, they need to reevaluate how they access their data.

Manual data entry is expensive and time consuming. Technologies like optical character recognition (OCR) and intelligent word recognition (IWR) are rapidly improving but do not achieve the required accuracy levels without a significant effort in set-up, optimization and maintenance.

A man + machine approach can quickly, inexpensively and accurately provide the structured data needed for analytics-driven insights, which in turn are critical to success in today's marketplace. However, it is difficult to develop the capability in-house. New companies are emerging that specialize in this approach. They combine advanced machine computing and analytics with the superior contextual recognition powers of the human brain to accurately recognize printed and hand-written text and transform it to structured digital data. Insurers should embrace these new offerings, and their vendors, to eliminate the complexity and inefficiency associated with the process of creating a structured, digital data set. This will also allow them to improve their focus on their core competencies.

THE DATA CAPTURE CHALLENGE

How do we create the best environment for innovation? How do we rethink business processes? How do we analyze the data we have? How do we make the best use of the data we mine? These and countless other questions are at top of mind for insurers of every size. Yet the answer to a single fundamental question may provide the foundation for all subsequent decisions: how do we access and best utilize our non-digital data?

As insurers look to develop innovation ecosystems, ask thoughtful questions about where big data can take them, and ramp up to fully enter the digital age, they must also find economical, accurate and scalable solutions for accessing the data on which their future depends.

Insurers must become more adept at holding market share against agile new entrants with fresh digital technology, deep-pocket funding from eager investors, and substantially lower overheads. Many traditional firms struggle with outdated technologies and higher consumer expectations, fully realizing that making the most of their data is critical to creating better products, improving customer experiences, and countering the threat of new competitors.

Established insurers, over the past decades, have undertaken multiple reorganizations that affected their priorities, lines of business and delivery channels – and usually resulted in deeper and deeper data silos. A significant portion of that data exists in static documents such as paper forms.

Paper is an operational constant in insurance because, quite simply, it works. Paper was always and continues to be an ideal way to collect complex information and communicate heavily layered concepts. The challenge is to rapidly and accurately capture the information contained in paper forms in a way that maximizes operational efficiency, eliminates redundancy and remains flexible as the company grows and changes. This needs to happen without disrupting established and successful workflows.

That's a tall order, one that many insurers have difficulty embracing. Fortunately, rapid advances in data capture, which have moved beyond manual data entry and traditional OCR technology, are gradually easing the pathway to acceptance.

THE PRESSURE WITHIN THE INDUSTRY TO KEEP COSTS TIGHTLY REINED WILL ALWAYS BUILD, NOT LESSEN. INVESTORS AND BUSINESS LEADERS DEMANDING INCREASED COST CONTAINMENT OFTEN CONTRIBUTE TO THE SACRIFICE OF OTHER IMPERATIVES SUCH AS THE SPEED, QUALITY ASSURANCE AND SCALABILITY OF BUSINESS PROCESSES – TO THE DETRIMENT OF ALL STAKEHOLDERS.

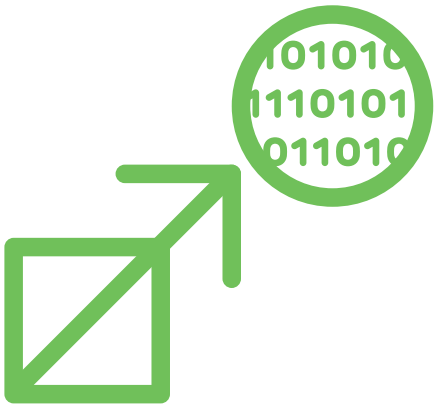
A QUESTION OF QUALITY

Finding a data collection and processing method that is scalable is also an ongoing challenge. Manual workers and legacy systems lack the scalability needed to maintain low costs and high data quality when volumes escalate to millions of documents.

Insurers spend millions of dollars a year giving humans the repetitive and tedious task of entering, into legacy back-end systems, the customer information they have collected from forms, faxes, e-mails and other documents.

The most common cause of data inaccuracy is human error, which often produces information that is not in good order (NIGO).[1] NIGO impairs data integrity, which in turn compromises analytics. The use of questionable data to inform decision-making may lead to adverse results. NIGO can also contribute to regulatory compliance and risk assessment nightmares.

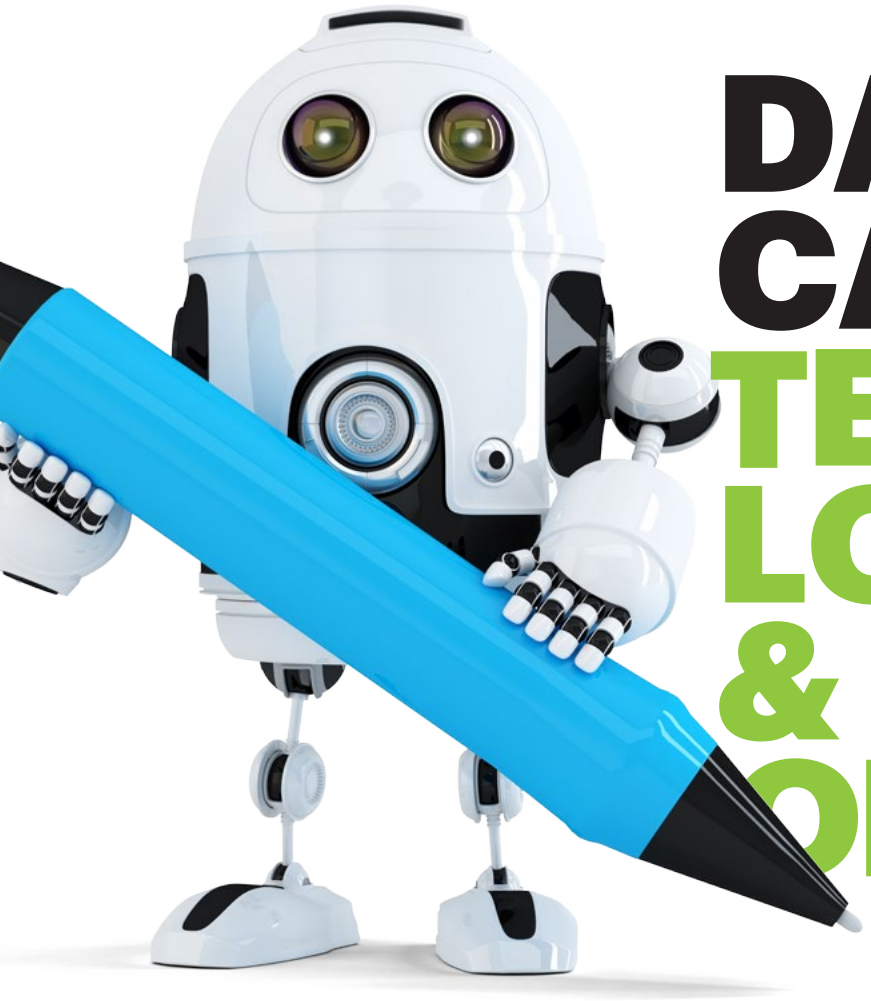
In research conducted by Experian Data Quality, 61 percent of companies reported that human error was a problem for their company.[2] The same report revealed that poor data quality is a board-level issue, with 83 percent of respondents in commercial companies believing revenue is affected by inaccurate and incomplete customer or prospect data.Losses take the form of wasted resources, lost productivity and avoidable communications spend.[2a]



Scalability is another core issue that insurers must grapple with when attempting to extract data from legacy systems. Up- or downscaling human workers exactly when needed is a tremendous challenge, exacerbated by the fact that manual workforces often have high turnover rates. Offshoring, while potentially cost-effective at first glance, isn't necessarily a reliable, quality-driven choice when dealing with voluminous data. In addition, legacy infrastructure makes it difficult to administer adjustments to supporting IT technologies to serve changing needs. All of these truths lead to cost inefficiencies, especially when insurers consistently have to spend time and money training newly recruited workers. The right data capture approach can help insurers create value by reducing back-office costs.

The automation of manual data entry tasks (e.g., forms processing) has the potential, in addition to decreasing costs, of increasing operational efficiencies. These in turn help insurers dramatically improve the customer experience by facilitating faster response times and requiring fewer requests to customers to verify data accuracy. Automation is a wonderful thing, but like everything else – the key to its success is in its execution.

MANY STEPS ARE NEEDED BEFORE THE RICH REWARDS OF BIG DATA CAN BE REAPED; OF THESE, CHOOSING THE RIGHT DATA CAPTURE METHOD FOR YOUR ORGANIZATION IS ONE OF THE MOST IMPORTANT. BEST-FIT TECHNOLOGY YIELDS THE BEST RESULTS.



DATA CAPTURE TECHNOLOGIES & METHODS

WORD RECOGNITION TECHNOLOGIES

Three primary technologies exist, which convert images or PDFs of static documents containing typed or handwritten text into machine-encoded text: optical character recognition (OCR), intelligent character recognition (ICR), and intelligent word recognition (IWR).

OCR focuses primarily on machine printed text, and became available on a limited basis between 1975 and 1985[3] but has been around since the 1930s. It has become one of the standard methods of text and numerical capture for many industries, including insurance. Today's advanced OCR technology can recognize a multitude of fonts, patterns and numbers and convert static documents into searchable text. ICR is an advanced form of OCR that can identify handwritten characters. IWR can identify words and phrases that are handwritten either in block-print or cursive.

Some of these technologies have existed for many years, and have been consistently improved over that time. While they yield better accuracy and efficiency, limitations exist – even when considering them as one suite of tools. In order to achieve high accuracy rates, companies must spend a significant amount of effort and resources configuring and optimizing the technologies for each and every type of form to which the technology is applied. Even then, a significant amount of manual quality review and data entry capacity is required to support data capture through these technologies.

APPLICATION OF TEXT RECOGNITION TECHNOLOGIES

Not only do companies have a range of recognition technologies from which to choose, there are a variety of ways in which these technologies can be applied. Companies need to consider a host of factors when determining the method(s) that they wish to invest in to fulfill their data capture needs.

One of the most common forms of applying recognition technology is through its incorporation into document management systems (DMS) and more broadly, enterprise content management (ECM) systems. For example, document imaging, PDF conversion, and text recognition technologies developed by ABBYY are in use across the globe by document capture solution specialists including Dell, Kurzweil, EPSON and Captiva. Kofax Image Products uses ABBYY technologies as part of its capture platforms.

ECMs have enabled certain global insurance firms to overhaul their entire legacy system and business information communications throughout every level of their enterprise. Little question exists that they can improve a company's IT infrastructure and increase efficiency. However, relying on ECMs to be solely responsible for fulfilling a company's data capture needs is not always the best solution. Implementation can be expensive and time-consuming. Today's fresh crop of leading-edge technology providers can successfully equip insurers of all sizes with reliable, cost-effective data capture and transformation software that achieves extremely high accuracy levels and requires relatively small to no complex integrations or IT resources.

MOBILE DATA CAPTURE

With mobile data capture (MDC), users take images of documents using a camera-equipped mobile device. The image data is sent to a data capture server that extracts the information stored in the image. MDC solutions are flexible, scalable, and increase speed while significantly decreasing the operating costs associated with data capture. ABBYY and Kofax offer on-device mobile capture solutions.

MDC can be used very effectively as the platform of a digital-first capture strategy; data is entered on the device and moves directly into a back-end system. This approach is most effective for organizations that don't have the need to merge digital data with pre-digital data, and can use it as the sole or primary data capture solution. For this reason it may be ideal for smaller, more contemporary entrants into the insurance industry; it is neither realistic nor appropriate as a one-size-fits-all approach for traditional insurers.

CROWDSOURCING AND MACHINE LEARNING

The merging of human and artificial intelligence is an approach to data capture that is at once flexible and scalable. Software alone, while far-reaching in its abilities to capture information from static sources, cannot accurately contextualize data. That ability remains a function of human intelligence. Crowdsourcing – the collection of meaningful human intelligence from virtually unlimited sources at any time and for any purpose – can be used to significantly enhance data capture software.

DATA AS A SERVICE

Capture is one of the most complex, labor intensive and challenging aspects of the document delivery pipeline. Data-as-a-service (DaaS) solutions do not require upgrades to existing IT infrastructure, business operations, or the way day-to-day transactional data is processed. One such DaaS provider on the leading edge is Captricity. Its approach makes captured data available in a record that can be viewed and downloaded from a secure website or imported directly into existing CRM and ERP systems and statistical analysis tools. All interactions with the product occur via a web browser, agent, or application process interface (API). All data is protected at every step of the capture, extraction and release processes by fully securing the API and web application via SSL (https), encrypting all data at rest and in-flight, and implementing special security considerations during each step of the process.

USE CASES

EFFICIENT DATA CAPTURE DRIVES REVENUE

The sales process for complex insurance products involves a significant amount of paperwork. That's a fact of the business that isn't going away. What is going away for one major U.S. insurer is the time, effort and cost required to digitize the volumes of paper associated with new product sales.

For life insurers, the core customer-advisor interaction takes a significant investment of time at the front end to explain the products and help the customer make informed choices. Once the paperwork leaves the agent's hands and moves downstream through the firm's document pipeline, more time is required to scan and index the forms, and to cherry-pick key data via a combination of OCR and manual data entry.

In this case, the insurer set a goal to make a measurable improvement in turnaround time and the quality of the resulting digital data set, while simultaneously reducing its operational complexity and expense. To achieve this, it decided to partner with Captricity to make use of the vendor's unique union of machine learning and human intelligence.

Captricity's proprietary digitization system sorted, recognized and extracted data faster than the insurer's existing document management and data capture solutions (i.e., low-level OCR followed by a significant amount of manual data entry). Combining the power of people (via crowdsourcing) and machines (via machine-learning IWR algorithms) to digitize data at extremely high levels of accuracy, Captricity enabled the insurer to speed up turnaround time while reducing operational costs and improving effectiveness in the market.

DATA CAPTURE AS THE WAY AHEAD

Data capture is of the utmost importance to insurers. A highly accurate, digital data set quickly enables the levers of market growth, customer retention and profitability. Speed to higher quality data does the following:

1. It improves an insurer's ability to react effectively to its customers' and prospects' requests, thereby enhancing the customer experience, retention and growth.
2. It enables advanced analytics, which increases the speed and quality of business insights. This in turn improves the effectiveness of the insurer's actions – driving profitability, market growth and retention.
3. It reduces regulatory and compliance risk, which has huge ramifications for profitability, as well as growth and customer retention.

Manual data entry creates multiple problems: data quality issues, operational complexities, and the difficulty of maintaining fast turnaround times due to an inability to accurately forecast demand and workforce scalability, to name just a few. Insurers can begin to tackle these problems by taking a look at some of the new options available to facilitate data capture: newer, more advanced character and word recognition technologies, as well as vendors that specialize in data capture and combine the powers of crowdsourced labor and advanced machine-learning-enabled OCR / IWR algorithms.

When considering data capture technologies, insurers should ask themselves a few key questions to help identify if a change is warranted, and if so, to help guide the decision on where to start:

IMPACT: Is the need to centralize data – both from legacy systems and newly-captured sources (such as MDC) – an ongoing challenge for your organization?

QUALITY AND RISK EVENTS: Is the elimination of NIGO data from handwritten forms essential to your firm's governance structures, compliance and risk management?

COMPLEXITY: Do you have difficulty determining the quality, type, and amount of data in your legacy system, due to disparate or fragmented silos or inaccessibility? Is the cost of manual data entry and review becoming prohibitive?

COMPETITION: Are you using your legacy data as effectively as possible to update business processes, improve internal and customer-facing experiences and gain market share?

CURRENT STATE OF DATA CAPTURE: Is OCR currently used in the business? Is it primarily for indexing purposes or also for bulk data capture? What are the accuracy rates? How much manual data entry is required to achieve accuracy targets? What are the most critical forms from a business intelligence, customer experience, and regulatory risk perspective?

Once these questions have been answered, the need will be apparent and the starting point will have been identified. The insurer will be well on its way to changing how quickly it is able to get to a high-quality, structured, digital data set, which in turn will enable a much stronger ability to predict, react and achieve.

ABOUT THE AUTHOR

Joel K. Schaefer is a Business Strategy Executive in Accenture's Insurance Strategy Practice. He has spent the bulk of his career working in the financial services, insurance, and banking industries focusing on operational strategy; large-scale, operational transformation implementations; big data & predictive analytics; and technology design & development efforts in the areas of automation, data visualization, and business intelligence. He is currently focused on helping insurance executives design and implement operational efficiency initiatives, especially in the realm of robotics process automation and process excellence. Joel holds an undergraduate degree in quantitative economics and mathematics from Tufts University and an MBA from the Tuck School of Business at Dartmouth.

FOOTNOTES

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