

# Robots join the team

Automation, transformation and the future of actuarial work for insurers

```
mirror_mod.use_y = false  
mirror_mod.use_z = true
```

```
selection = the end  
mirror_ob.select  
modifier ob.select
```

```
objects.a
```

```
ob))
```

The EY logo is displayed in white, bold, sans-serif font. The 'E' and 'Y' are connected at the top. A yellow diagonal bar is positioned above the 'Y'.

Building a better  
working world

# Contents

- 2 What is robotic process automation?
- 2 Robots in the workforce
- 3 The rise of robots – a history of rapid evolution
- 4 Business case and benefits of RPA
- 5 The rise of robots
- 5 RPA in insurance and actuarial
- 8 Automation in context – driving to holistic methodologies
- 9 RPA and the future of actuarial work

Insurers are embracing innovation and advanced technology like never before as they seek to drive growth, preserve profitability and manage risk. Insurance leaders in finance, risk and actuarial, in particular, are under pressure to modernize and transform their operations, toolsets and workforces to better serve the business.

These transformation and modernization initiatives can take many forms, from major systems upgrades, and more sophisticated data management and analytics capabilities, to new operating models with increased offshoring and outsourcing. Such programs will have a profound impact on the future of actuarial work. That future is taking shape now.

Robotic process automation (RPA) has emerged as a key technology enabler of increased automation, more efficient and integrated processes and higher organizational productivity across the insurance enterprise. RPA is accelerating innovation in actuarial, both as part of a broad-based and industrial-strength transformation to targeted improvements as well as specific processes or work streams.

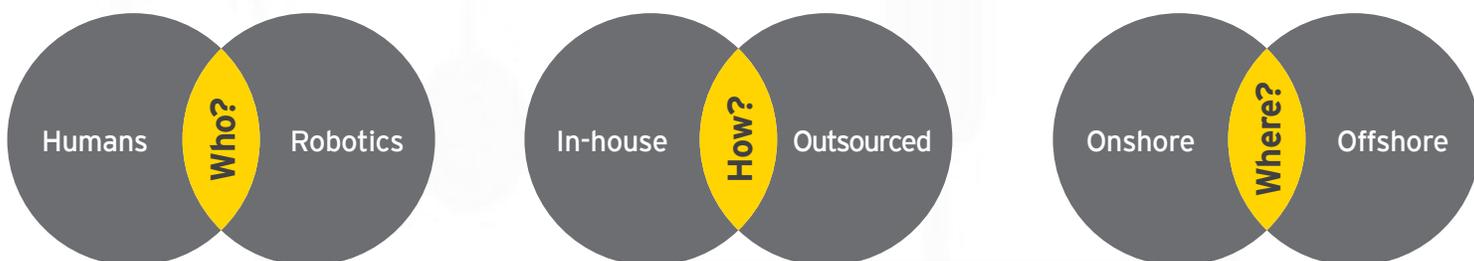
# What is robotic process automation?

The Institute for Robotic Process Automation & Artificial Intelligence defines RPA as “the application of technology that allows employees in a company to configure computer software or a ‘robot’ to capture and interpret existing applications for processing a transaction, manipulating data, triggering responses and communicating with other digital systems.”

Essentially, RPA is the use of software to replicate the actions of human beings in performing specific tasks and interacting with other systems. In this sense, robots are virtual coworkers adept at handling recurring tasks, enabling human workers to focus on higher-value and analytical activities. Robots have their own security profiles (ID, passwords and credentials) to access company or external resources and execute functions in the same way employees do; work is performed in compliance with business requirements and security policies.

## Robots in the workforce

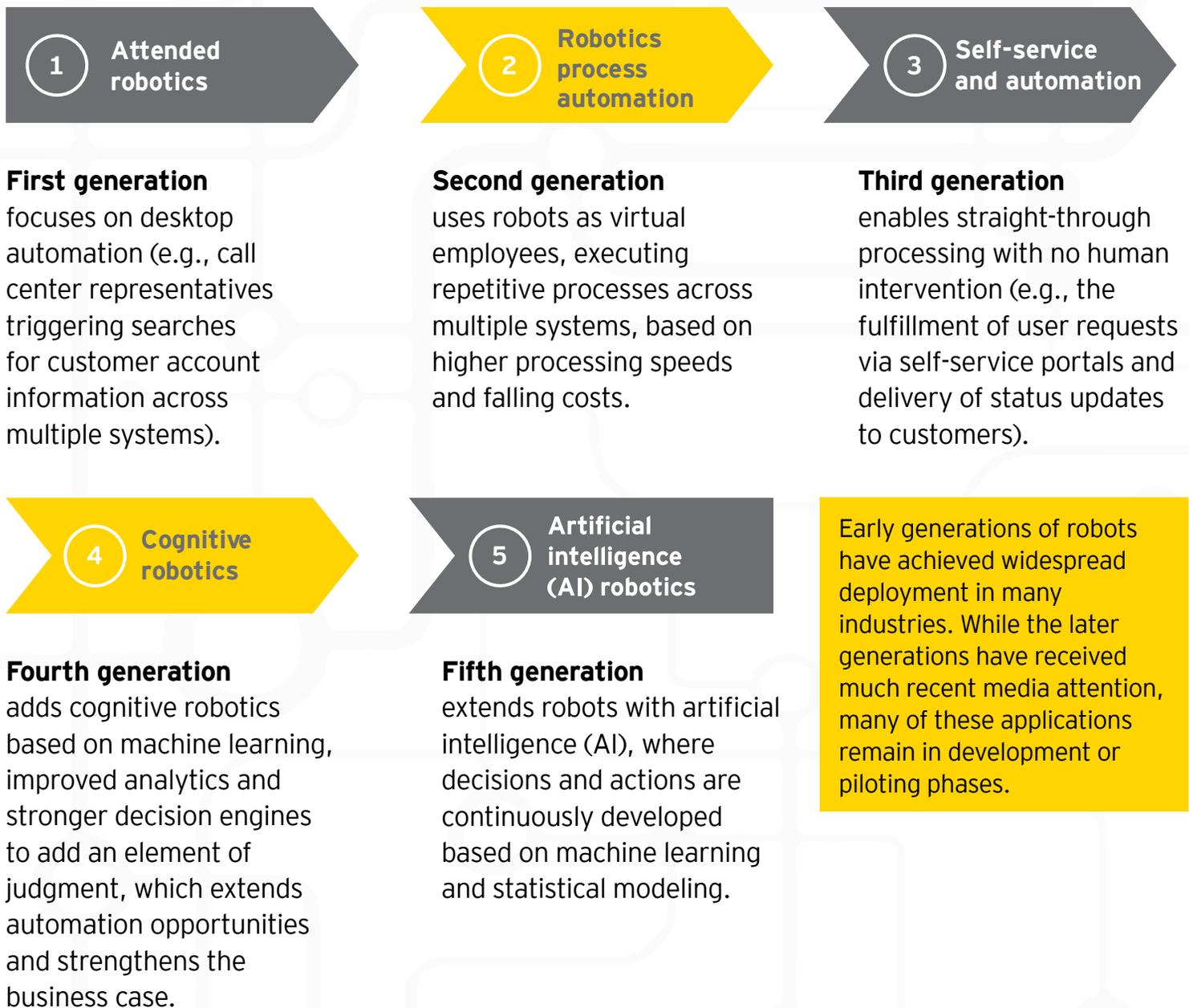
Given their evolving role in organizations, robots will impact talent management and sourcing strategies. Insurers seeking the optimal workforce model, as well as effective right-shoring and sourcing strategies, will need to factor robotics into their decisions. In many cases, robotics is emerging as an attractive alternative to offshoring or as a lever to further optimize costs for those processes already offshored.





# The rise of robots – a history of rapid evolution

Robotics capabilities have advanced rapidly in recent years and continue to evolve at an impressive rate. Processing speeds and self-learning capabilities have improved considerably:





## Business case and benefits of RPA

**The rapid adoption of RPA is no surprise, considering the significant value it can deliver:**

- ▶ Increased efficiency and productivity
- ▶ Accelerated cycle times for key processes, such as policy issuance, claims processing and the financial reporting statement close
- ▶ New and improved sales and customer service interactions and delivery models
- ▶ Improved quality, consistency, transparency and controls
- ▶ Enhanced employee engagement and value contribution resulting from a reduction in time spent on administrative activities and an increase in focus on higher-value activities

Robotics can increase profitability and enhance the customer experience by improving responsiveness and communication, while lowering resource costs. For example, in property and casualty (P&C) insurance claims processing, the speed of settlement is directly related to both the cost of the claim and customer satisfaction.

Part of the appeal of RPA is its noninvasive nature. Typically, robots can be overlaid on existing systems and can interact with and across all of the same internal and external systems as humans.

**This contributes to a compelling business case for RPA in comparison to some transformation and modernization initiatives because:**

- ▶ Up-front investments are relatively modest
- ▶ Payback periods are relatively quick
- ▶ Return on investment is attractive
- ▶ Implementations can be achieved with modest demands on key IT resources

**The bottom line:** RPA offers value whether deployed as part of full modernization programs or as an incremental step in automating and streamlining specific recurring processes, sub-processes and tasks.



## The rise of robots

Because the benefits and business case align with the goals and objectives of many insurers, it is easy to see why robotics is quickly gaining traction in the industry - with forecasts calling for much broader adoption in the coming years.

A landmark 2013 study by Oxford University<sup>1</sup> found that a number of insurance jobs - including those in underwriting, claims settlement and policy processing - were among the most likely to be handled by robots, or via “computerization,” with a probability of at least 98%. While specific finance, actuarial and tax-related roles were not included in the study, EY’s experience confirms that insurers also have an appetite for automating these activities. Indeed, these changes are already taking place.

It’s not just the insurance sector that is automating work through robotics. According to Gartner<sup>2</sup>, about one-third of all customer service interactions are now handled without any human interaction. By 2020, that number could reach 85%. As for costs, EY’s research<sup>3</sup> has shown that RPA can reduce the cost of manual operations by 25% to 40%.

## RPA in insurance and actuarial

Due to the compelling value proposition, many leading insurance companies have begun using robotics to automate standardized processes. These include claims processing, policy administration, underwriting, accounting and finance, actuarial and tax.

### Most insurers present a target-rich environment for RPA thanks to their:

- ▶ Complex web of legacy systems and inefficient manual processes
- ▶ Need to enhance the customer experience to succeed in digital channels
- ▶ Need for increased efficiency to remain competitive and fund innovation and growth initiatives in a time of thin profit margins

<sup>1</sup><http://www.eng.ox.ac.uk/about/news/new-study-shows-nearly-half-of-us-jobs-at-risk-of-computerisation>

<sup>2</sup>[https://www.gartner.com/imagesrv/summits/docs/na/customer-360/C360\\_2011\\_brochure\\_FINAL.pdf](https://www.gartner.com/imagesrv/summits/docs/na/customer-360/C360_2011_brochure_FINAL.pdf)

<sup>3</sup><https://fsinsights.ey.com/sectors/Insurance/the-journal-of-financial-perspectives-insurance-edition>



Companies are exploring opportunities for automation in key actuarial processes and tasks, including:

### Property and casualty, accident and health

- ▶ Data preparation: extraction, reconciliation and formatting
- ▶ Reserving analysis, including rules-based selection
- ▶ Standard report preparation
- ▶ Pricing and rate monitoring
- ▶ Rate filing and rating quotes
- ▶ Experience monitoring and trend analysis
- ▶ Financial Planning and Analysis support – preparation and calculation of scenarios
- ▶ Data visualizations

### Life and annuity

- ▶ Modeling and forecasting – model runs and updates
- ▶ Valuation and reporting
- ▶ Reinsurance administration and reporting
- ▶ Experience monitoring
- ▶ Product development and pricing
- ▶ System conversions
- ▶ In-force administration – workarounds for existing policies



```
34E9F13E7D> Install-Binaries -dysp  
1) <C400C9E5-601A-307E-3459-4F7B46434F4D> System.Library.Frameworks.Application.Services.Framework.VisualStudio.Framework.Services.Services  
E2-08C0-3658-4899-7A34E-45D38F7D> System.Library.Frameworks.Data.Observers.Core.Framework.VisualStudio.Framework.Services.Services  
80D7E371E4D0> Install-Binaries -dysp  
35-4F4F-3928-A0C7-2988E494245D> System.Library.Frameworks.Core.Foundation.Framework.VisualStudio.Framework.Services.Services  
E1-5E2B-9482-436272B> System.Library.Frameworks.Core.Foundation.Framework.VisualStudio.Framework.Services.Services  
5-48645CAE42B> Install-Binaries -dysp  
A-78FD-3883-463E-5833435F75D> System.Library.Frameworks.Core.Foundation.Framework.VisualStudio.Framework.Services.Services
```

Companies considering RPA should examine the success stories of early adopters. One life insurer used RPA to automate some of the essential steps in its cash flow testing process. When business units submit model results to corporate actuarial, a robot performs a series of validations on the submissions, aggregates the results, updates the status tracker and sends email notifications as process milestones are achieved or issues arise.

**The company has achieved a number of significant results, including:**

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>▶ Actuaries can now focus on exceptions, reviewing model results identified by the robot as being outside of predefined tolerances.</li></ul>       | <ul style="list-style-type: none"><li>▶ Rework is minimized since each work step is consistently executed and automatically documented.</li></ul>   |
| <ul style="list-style-type: none"><li>▶ Cycle times are shorter because the robots operate on a 24/7 basis and submissions outside of business hours are immediately processed.</li></ul> | <ul style="list-style-type: none"><li>▶ Key review and decision points have been incorporated where human judgment is needed. In some instances, sign-offs from the process owner are required before the robot will proceed to the next milestone.</li></ul> |

RPA was similarly effective in performing quarterly analysis across 20 property and casualty reserve segments. Despite the use of reserving software, the process was inefficient with significant time spent on manual activities, such as data preparation, prior to the selection of assumptions.

**To improve the efficiency and controls, RPA took on data preparation sub-process tasks, including:**

- ▶ Copying and pasting prior year data to current spreadsheets
- ▶ Aggregating and copying current evaluation data to the latest diagonal
- ▶ Uploading the triangles and other data into the reserving software
- ▶ Setting initial assumptions based on the prior evaluation selections process
- ▶ Exporting initial results into data visualization and reporting software



Just like a human, the robot worked across multiple platforms - including Excel (with macros), reserving software and data visualization tools - providing additional information for better decision-making. RPA also allowed actuaries to focus on the selection of assumptions and in-terpretation of results.

**In this situation, implementing RPA led to:**

- ▶ Productivity gains and overall cycle time reductions of 25% to 30%
- ▶ Improved controls
- ▶ Earlier and better insights into emerging trends and business implications

## Automation in context – driving to holistic methodologies

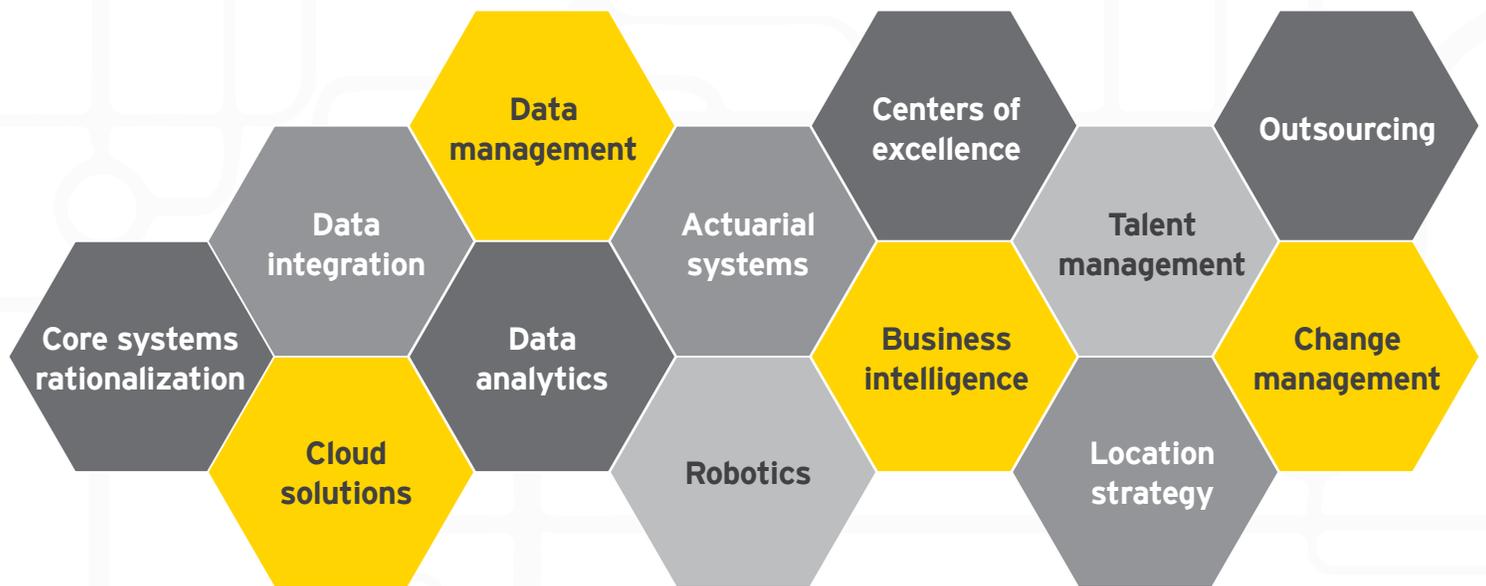
It's important to recognize that RPA is one of a variety of technologies that can be leveraged to drive automation in finance, risk and actuarial functions. Further, it's only one element of broader modernization and transformation initiatives.

**Those programs may also involve:**

- ▶ Rationalization of modeling, valuation and analysis systems and migration to next-generation platforms
- ▶ Centralization of modeling, valuation, reserving and other critical functions
- ▶ Enhanced data management practices, including big data techniques, and the embedding of analytics throughout the value chain
- ▶ New sourcing strategies, including using resources in lower-cost, offshore locations and/or outsourcing to third-party providers
- ▶ Adopting new or updated talent management strategies
- ▶ Applying business process management and other automation tools



Companies seeking to boost their returns on transformation and automation investments and enhance the value that actuarial can bring to the business should consider their options holistically and decide which tool, or combination of tools, is right for their unique circumstances and objectives.



## RPA and the future of actuarial work

RPA is one of several megatrends reshaping the economy and the nature of work itself. Thanks to the drive for more customer-centric offerings, transformation and modernization programs, and associated technology innovations, the future work of actuaries and others will be vastly different than their past work.

Actuarial “customers” in the business want better, more timely and efficient decision support. External customers and distributors want more personalized experiences, faster answers and more digital interaction. These demands are accelerating innovation and disruption, requiring new levels of cross-functional collaboration. More and more tasks and activities will be automated.

Although increased straight-through processing will displace a significant number of jobs over time, the remaining workers will be realigned to higher-value analytical and decision support activities, with new roles and responsibilities yet to emerge.

Leaders will require new competencies to manage a workforce that is becoming leaner, but also more skilled, diverse, remote and contingent. Attracting and retaining high-performing workers will be more important - and more difficult - as employee expectations rise and the competition for talent intensifies.



Executives will be evaluated on their ability to drive innovation and adopt data-driven, analytics-enabled decision-making as the new normal.

It is a challenging time for actuaries and the industry as a whole, but it is also an exciting era of unprecedented opportunity.

### Thriving in the new era will require:

- ▶ Strong and diverse leadership teams with the ability to align and integrate the finance, risk and actuarial domains and to manage the “metrics that matter” related to growth, profitability and risk
- ▶ A bold vision for how work will be performed and the future state operating models needed to succeed (e.g., increased automation and skilled resources focused on higher-value tasks)
- ▶ A framework for making strategic choices - prioritizing investments based on their alignment to the company purpose and their ability to deliver both immediate returns and sustainable competitive advantage
- ▶ Deep capabilities in talent development: recruiting, developing, retaining and motivating high-potential staff
- ▶ A culture that inspires and enables innovation and teamwork, wherein significant organizational change will be required to instill a “disrupter” culture capable of adapting to, and proactively driving, constant change and where leaders will need to inspire creativity and promote risk-taking and innovation

While it’s difficult to predict exactly what the future will look like, it is clear that the actuarial functions of the future will be leaner, more data-driven and more technology-enabled. Actuarial leaders who take bold action today will reap the benefits and provide more value to the business going forward.

Standard processes automated with robots complementing the traditional workforce

Focused on creation and communication of business insights and higher-value analytical tasks

Highly connected teams across actuarial, finance, risk, claims and underwriting teams

Information interpreters and data and analytics champions supporting new products and offerings

# Authors



**Mike Hughes**  
*Principal*  
Ernst & Young LLP  
+1 312 879 2122  
michael.hughes@ey.com



**Ian Sterling**  
*Senior Manager*  
Ernst & Young LLP  
+1 215 448 5868  
ian.sterling@ey.com



**Raju Saxena**  
*Senior Manager*  
Ernst & Young LLP  
+1 617 375 3751  
raju.saxena@ey.com

The views expressed by the authors are not necessarily those of Ernst & Young LLP or other members of the global EY organization.

This article originally appeared in the Jan-Feb issue of Contingencies magazine. © American Academy of Actuaries, 2018. Reproduced with permission.

## EY | Assurance | Tax | Transactions | Advisory

### About EY

EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organization, please visit [ey.com](http://ey.com).

Ernst & Young LLP is a client-serving member firm of Ernst & Young Global Limited operating in the US.

© 2018 Ernst & Young LLP.  
All Rights Reserved.

EYG no. 00782-181Gb1  
1801-2550757 (BDFSO)  
ED None

[ey.com](http://ey.com)

### EY is a leader in serving the global financial services marketplace

Nearly 51,000 EY financial services professionals around the world provide integrated assurance, tax, transaction and advisory services to our asset management, banking, capital markets and insurance clients. In the Americas, EY is the only public accounting organization with a separate business unit dedicated to the financial services marketplace. Created in 2000, the Americas Financial Services Office today includes more than 11,000 professionals at member firms in over 90 locations throughout the US, the Caribbean and Latin America.

EY professionals in our financial services practices worldwide align with key global industry groups, including EY's Global Asset Management Center, Global Banking & Capital Markets Center, Global Insurance Center and Global Private Equity Center, which act as hubs for sharing industry-focused knowledge on current and emerging trends and regulations in order to help our clients address key issues. Our practitioners span many disciplines and provide a well-rounded understanding of business issues and challenges, as well as integrated services to our clients.

With a global presence and industry-focused advice, EY's financial services professionals provide high-quality assurance, tax, transaction and advisory services, including operations, process improvement, risk and technology, to financial services companies worldwide.