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FinTech

Innovation

*From Robo-Advisors to Goal Based
Investing and Gamification*

PAOLO SIRONI

WILEY

FinTech Innovation

*From Robo-Advisors to Goal
Based Investing and Gamification*

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Preface

So far, most of my professional life has been spent at the intersection between **FIN**ance and **TECH**nology, whose line of separation has recently been blurred by financial technology companies (FinTechs). The forces that are fostering their innovative mindset are unveiled in this book, which closely scrutinizes the revolution occurring in the wealth management industry, and particularly digital advice, personalized investing, and cognitive analytics being used to give insight into the behaviour of customers. The findings are based partially on market research and academic material, but mostly on what I owe to the hundreds of business conversations with industry leaders, innovators, entrepreneurs and colleagues. They have enriched this book, transformed any business travel that I have undertaken into a scholarly opportunity, and ultimately made my humble career, which started in risk management, an invaluable journey. Back in the 1990s, I learned to implement advanced quantitative methods to manage trading risks and I engaged periodically with top managers and regulators in search of graphical yet robust simulation methods to turn complex mathematical equations into intuitive reporting. When the wind of innovation blew at my door in the early days of the FinTech revolution, I was easily led on an entrepreneurial journey, it was my goal to change the investment experience as it existed between financial advisors and their respective clients, to allow them to speak more comfortably the intuitive language of Goal Based Investing (whose quantitative foundations are demonstrated in my previous book *Modern Portfolio Theory: from Markowitz to Probabilistic Scenario Optimisation*). I then had the privilege and deep learning opportunity to engage with the extensive network and client base of IBM on a global scale. This contributed to refining the strategic thinking at the heart of this book about the many challenges that small and large wealth management firms face in a disrupted landscape made of technology developments, generational shifts, changes in investors' behaviour, tighter regulation, and declining revenues in the traditional models of financial advice. Wealth managers do stand at the digital epicentre of a tectonic fault, which is disrupting their landscape that has, in many ways, been unchanged for centuries.

On the institutional side of this fault, FinTechs have been building new business models, such as automated investment services, that compete fiercely with established banking operations. There is an ongoing debate about the future of the industry and the chances of FinTechs to disintermediate incumbent organizations fully. Whether they will settle in as the new leaders, or will die like a bee after expending its sting, cannot really be divined and is not the primary scope of this book. We are

not siding either with David or with Goliath. What we are instead concerned with is any innovation that can transform the investing experience to benefit each and every one of us, the community of taxable investors and their human or digital financial advisors. As a matter of fact, FinTechs have already won the first round of the innovation battle, as incumbents have started to update their business models and compete in a challenging race to zero prices. Robo-Advisors, for example, were born as “garage companies” using digital tools to on-board customers and enhance their experience to disintermediate retail and private banking relationships. They also developed advanced technology to operate automated portfolio rebalancing, to squeeze trading costs to a minimum, and disintermediate the role of asset managers.

On the other side of the fault, the community of end-investors is also shifting in response to technology trends which are transforming social behaviour globally. Not only Millennials but older generational cohorts are embracing with unforeseen facility all aspects of the digitalization of everyday life. From a wealth management perspective, their willingness to become more digital in handling their investments has further lowered the barriers to entry.

The transforming forces at play inside this fault are unprecedented. The offer-side has always dominated the wealth management relationship because financial institutions had unrivalled placing power with private clients. They could team up with product factories, such as asset managers and desks of capital markets, to embed hefty fees into financial products, collect them from final investors, and redistribute them among institutional players. The loss of reputation suffered by these players during the Global Financial Crisis (GFC) has seeded the regulatory terrain with new legislation, which is breaking the financial services’ cartel in favour of final consumers, by raising fiduciary standards and enforcing greater transparency. While the offer-side is becoming progressively a “constrained offer-side”, the community of investors is granted the flexibility to disintermediate centuries-old banking frameworks with relatively easier to understand investment experiences, any time, anywhere, at a much lower costs. This process of digitalization of the banking relationship is encouraging the demand-side (private clients) to take a more conscious and proactive role, empowering individuals and with them their personal financial advisors or digital intermediaries, and threatens to relegate wealth management institutions to lower margin business models.

The epicentre of this figurative earthquake is indeed located in the process of remodelling the **asymmetry of information**, which has always characterized the relationship between institutions and final clients, and kept the tectonic fault between them stable. This is now being pulled apart! The community of investors, intermediated by smart and tech-savvy financial advisors, can now become the new price-makers and force banks to be price-takers as part of a global process of **banking democratization**.

The book takes us on a journey below the disrupted surface of the wealth management industry, providing insights into what happens in its underlying layers. Deep within the crust, digitalization and demographic changes coupled with social media

and Big Data analytics are colliding against established economic interests. Yet, this seismic activity is not just unsettling the technological and business landscape around but is also creating new minerals, a process known by scientists as flash evaporation. **Goal Based Investing** (GBI) is the resulting gold mine enriching the fault zone and is permitting early adopters of robo-technology to transform disruption into sustaining innovation. The theory of innovation provides a framework that helps to explain where the forces of change originate from, what is happening in the marketplace, and how the industry can evolve once robo-technology becomes mainstream.

Pre-eminently, Goal Based Investing seems to be the new normal in investment management as it provides a solution to fee-only businesses attempting to showcase their added value. Although such an investment philosophy is not new in economic studies, the industry has never truly felt compelled to realign to its best practice imperatives: traditional sales models have long proven that product-driven organizations were profitable. Moreover, technology constraints did not previously allow the building of the right customer experiences and make GBI principles effectively engaging. But this has now been solved by the usage of application programming interfaces (APIs), new digital tools, and faster than ever computing power. Furthermore, **Gamification** is emerging as a new digital force in the wealth management ecosystem. Goal Based Investing can provide the consistent mindset to gamify investments by simulating personal goals, market scenarios, and life events to enforce more adequate investment behaviour.

Discussing new methods (Goal Based Investing) and developing new solutions (automated rebalancing, API analytics, Gamification) might not be sufficient to enforce industry change if the economic incentives don't remodel as well within the firms themselves. In the present day widespread market regulation about fiduciary standards is facilitating a realignment to sounder client/portfolio-centric approaches. This enhancement is not cost free, and it requires a change of perspective from a traditional asset management point of view (optimization of the market variables) to a more personalized investment modality (elicitation of investors' ambitions and fears over time). In such a transforming environment, in which investors' fears and their long-term aspirations take centre stage, GBI principles will gear financial advice and financial planning to converge, and thus allow customization of the investment offering around clients' ultimate goals, generating premium services to tier and drive profitability (hence sustaining innovation). GBI robo-winners will be best placed to outpace laggards, whether FinTechs or digital incumbents.

Organization of the book

Individual investors, financial advisors, portfolio managers, technology and digital managers, banking executives, and FinTech entrepreneurs can gain strategic insights about the transformation of the wealth management industry by reading this book and understanding the links between new technology and quantitative finance, as well as

adapting to a tighter market regulation and higher fiduciary standards. Technology experts will learn about the rationales behind the many requests and challenges addressed to them by business owners. Financial professionals will learn how new technology can transform their business models and advisory workflows. To help facilitate this learning journey the book is organized into three parts:

- (Part One) Personalize Personal Finance
- (Part Two) Automated Long-Term Investing Means Robo-Technology
- (Part Three) Goal Based Investing is the Spirit of the Industry

Part One – Personalize Personal Finance

The **first and introductory chapter** presents a high-level model for banking transformation and refers to the theory of innovation, which is the rationale that links disruptive technology (Robo-Advisors and automated rebalancing) and sustaining innovation (Goal Based Investing and Gamification). Today's disruption is threatening a variety of market participants and goes beyond the fate of human advisors: ETF providers, mutual funds, active funds and platforms are all primarily affected. While digitalization lowers the barriers to entry and reduces intermediation margins, Goal Based Investing allows us to personalize and differentiate the investment offer to increase revenues, and thus calibrate to the clients' requirements by means of social and behavioural analytics.

Part Two – Automated Long-Term Investing Means Robo-Technology

The second part opens with the **second chapter** of this book, which provides a non journalistic definition of Robo-Advisors and a discussion about their strengths and weaknesses. They have five main attributes: they are automated digital businesses, they promote passive investing, they provide automated portfolio rebalancing and tax optimization, they engage customers on personal goals and behaviour, and they are single minded businesses.

The **third chapter** examines the changes in the marketplace, with particular reference to the offer-side of the supply-demand mechanism. All actors involved in the industry are affected by these changes, which Robo-Advisors seem to exploit. The chapter looks into the future of robo-advice and explains how tech-savvy financial advisors can use indexation and robo-technology to their competitive advantage. They can use algorithms for "alpha" generation (that is model portfolios provided by automated rules) and focus on "gamma tasks" to justify their fees (that is human added-value advice and financial planning). Financial advice and financial planning begin to converge, as Goal Based Investing leads the way.

The **fourth chapter** focuses on mega trends affecting the behaviour of the demand-side, made up of the variety of private and taxable investors. Since Millennials and Baby Boomers are shown to interact differently with digital media, financial advisors can learn to optimize their practices by tiering the clientele on digital and goal-based groups: clients' triage is no longer a function of disposable wealth but a function of their personality and techno-literacy.

The **fifth chapter** summarizes the most compelling dilemma of the wealth management industry and sketches the potential outlook of a highly digital supply-demand chain. The key factor is the personalization element, hence the usage of robo-technology to facilitate a holistic Goal Based Investing approach to financial well-being.

Part Three – Goal Based Investing is the Spirit of the Industry

The third part is therefore dedicated to Goal Based Investing and Gamification.

Part Three opens with the **sixth chapter** of the book, which describes Goal Based Investing (GBI) as the ultimate step in personalization within the journey of wealth management innovation, which sits at the crossroads between classical portfolio theory and behavioural finance. Individuals seem to make investments according to their mental state at a particular time, hence they exhibit multiple goals, multiple priorities, multiple investment horizons, and multiple risk tolerances. The probability of achieving/missing a target becomes the key analytics to generate and discuss in a GBI compliant investment policy.

The **seventh chapter** features a quantitative discussion about the most common approaches of portfolio modelling, which have been adopted by the first generation of Robo-Advisors. Alternative solutions are also featured, such as Probabilistic Scenario Optimization (PSO), to strengthen GBI implementation, allow for graphical representations of past and future performance, guide investors and advisors in making consistent decisions of portfolio rebalancing, and provide a framework for scenario analysis and quantitative Gamification.

The **eighth chapter** provides further insights about Gamification, which is more art than science, but seems to provide a chance to support a behavioural finance effort to rewire investors' brains towards a sounder investment engagement, by means of exposing them to gamified investment experiences.

Finally, the author gives his **concluding remarks**, certain that the readers can by then appreciate – albeit not necessarily share – all the theories, evidence, and reasoning that this book provides.

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I am sincerely grateful to the numerous clients, colleagues, and friends who, knowingly or unknowingly, have enriched my whole professional life. In particular, I owe thanks to Thomas Martin who has provided continuous feedback and constructive criticism to shape some of the ideas featured in this book, and to Anil Suri who has rewarded me with open conversations during my NY travels, which also refined my vision about Goal Based Investing and Gamification. I am also grateful to my colleagues at IBM Risk Analytics, my professional family in the broader IBM, for their incessant dedication, and Wiley's editor Thomas Hyrkiel, for believing in this thought leadership project. Most importantly, I am indebted to my family, who love me and helped me dedicate time to this work.

This book contains thoughts, strategic views, and opinions which have forged the professional background of the author but are the author's only; these do not necessarily represent the practice nor the views of my current or previous employers, nor the beliefs of my present and past colleagues.

Paolo Sironi, 2016

About the Author

Paolo Sironi is a recognized author of books about portfolio management and FinTech innovation. In his current role as IBM thought leader for Wealth Management and FinTech Analytics, Paolo links FINance and TECHnology globally, demonstrating sound expertise over a number of areas including Wealth Management, Asset Management, Risk Management and Financial Technology.

Prior to IBM, Paolo founded a FinTech startup (2008) to provide Goal Based Investing solutions to wealth managers. The startup became a part of IBM (2012) following the acquisition of funding partner Algorithmics, a world leader of risk management solutions.

Paolo has a decade of risk management expertise; he was previously head of market and counterparty risk modeling at Banca Intesa Sanpaolo.

Paolo's posts can be read on LinkedIn, Twitter: @thepsironi or his personal website: thepsironi.com.

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One

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