

Analysis of Contemporary Trends in Data Science for the Financial Planning Industry

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Table of Contents

Abstract.....	1
The Context	2
Key Factors Driving Innovation	2
Factor 1: Robo-advice	2
Opportunity	2
Issues	3
Factor 2: New Types of Advice	3
Opportunity	3
Issues	4
Factor 3: Investment Profitability.....	4
Opportunity	4
Issues	6
Impact	6
Reference List	7

Abstract

The financial planning industry is about to be disrupted by data science technologies. They could affect how financial advice is delivered, the type of advice people will need, and even how financial markets work overall. These changes may mean the industry will have to change its value proposition.

Context

The financial planning industry's value proposition is to help "develop strategies to help you manage your financial affairs and meet your life goals" [FPA 2015]. This includes budgeting & investing, estate planning, and setting up financial structures such as trusts [Bedigian 2015]. The advice is provided by licensed financial planners, whose professional association has 12,000 members [FPA 2015].

The financial planning process is as follows: The planner meets with the client to help them decide what goals they want to prioritise. The client fills out a form that asks about their financial situation, so the planner can prepare a strategy to meet those goals. This usually involves recommending investment products. The law demands that customers get their advice in writing, which has created a sub-profession called paraplanning. The paraplanner prepares a tailored document called a Statement of Advice (SoA) explaining the advice. The client pays between \$200 and \$4,000 per plan [ASIC's Moneysmart 2017], while the cost of paraplanning might be \$100 to \$1,200 per plan [paraplanner.com.au 2015].

Key Factors Driving Innovation

While there are many factors that might drive innovation, three stand out.

- **Robo-advice** – where a computer program determines the advice and prepares the SoA, making the paraplanner, and arguably the financial planner, redundant.
- **New Types of Advice** – where data science technologies change the nature of jobs in the wider economy to the point that people don't need traditional financial advice, but something else instead.
- **Investment Profitability** – where investing pays smaller dividends, as businesses require less capital investment, meaning engaging a financial planner is less useful.

Factor 1: Robo-advice

Opportunity

Data science can transform how customers are advised, in two ways:

The first way replaces the paraplanner with a machine called a robo-advisor. This is a computer program that calculates the best combination of investments and tax structures so the client can reach their goal on time. It would also generate a document explaining that advice [Patten 2016]. These machines could replace a skilled paraplanner with an unskilled data entry clerk, which would not only reduce the cost of advice, but would also get it done faster. Robo-advice software has yet to replace Australia's leading financial planning software suites, COIN or Xplan, which don't yet have such capabilities [May 2015].

The second data science transformation would replace the financial planner with a robo-advisor that the client can use on their own. Authors such as Susskind & Susskind [2016] argue that professions are only able to exist if they are the only ones able to advise on a useful body of knowledge. They argue that as machines get more sophisticated, that knowledge can be held within computer programs, replacing the

professional with a machine at a lower cost. This provides an opportunity for the programmer who can build the next widely-used robo-advisor. Several Silicon Valley startups are attempting to do just that, such as Wealthfront, Acorns, and Betterment [Fiebert n.d.]. Robo-advisors could either generate fees, by giving advice without the cost of employed advisors, or provide financial advice for free, as an incentive to bank customers to consolidate their accounts with one institution.

Issues

Robo-advisors would have to contend with several data issues.

The most important is the long tail of complexity in financial planning. Any plan reduces the complexity of the world to a few numbers, but some plans need to account for more complexity than others. For instance, planning for retirement usually needs to take Australian laws into account. But some clients might want to retire overseas. If the program only includes Australian laws, it could give bad advice to customers who want to retire somewhere else. But if the program includes all tax laws, it becomes more complex, and therefore would take longer to build and be more expensive to maintain.

Privacy is also important, because financial advice is based on sensitive customer information. If the information is leaked or hacked, customers would be unwilling to provide their data in the first place, ending the robo-advice industry. Therefore, the program would need excellent security.

Getting access to the client's real time data is important, so advice can be generated whenever the client wants. This may involve connecting to data feeds from other financial institutions, like banks and insurance companies. However, this poses a threat to the existing institutions who would not want to help their competition. We are already seeing banks balking at these requests, although they cite privacy concerns as their reason. [Sidel 2015].

Finally, different institutions have their own definition of some financial terms. This means that when data is transferred from the one institution to the other, it needs to be cleaned and interpreted so that the receiving system understands the data properly. To alleviate this, the banking industry is developing the Financial Industry Business Ontology (FIBO), which attempts to define financial objects in more detail, so systems can share data more easily [Bennett 2013].

Factor 2: New Types of Advice

Opportunity

Clients may need different advice, as the nature of work changes due to cognitive computers replacing humans in jobs [Ford 2015]. The role of humans in this sort of economy is to find work for the machines to do and then program them to do it, meaning humans are more likely to work on short term projects than in secure jobs [Kelly 2016].

This is important for the financial planning industry, which is predicated upon its clients having a predictable stream of excess income they can invest. An uncertain income will change the clients' priority, from saving excess income to securing a more stable income.

This presents an opportunity for the industry to give advice on how to maintain an income. For example, the planner could advise clients on which skillset to learn that would complement what they already know to get them the next gig. This would combine knowing the client with knowing the skills that are in demand, based on data in job websites. Alternatively, for clients in industries where knowing the right people is more important than the skillset, planners could advise on the social circles to move in, using algorithms like social network analysis and data from social media sites.

Issues

The main issue would be getting access to the right data. Blavin [2012] speculates that scraping a website like seek.com.au would breach the common law of trespass upon chattels. To avoid this, the planner would need permission. But even if this could be arranged, the Australian Privacy Principles [*Privacy Act* 1988, Schedule 1] may complicate things further. APP 6 forbids the use of personal information collected for one purpose being used for a second purpose without the individual's consent. If job ads are deemed to be the personal information of the advertiser, then the planner would not be able to use it to coach a client on career direction without the advertiser's individual consent.

Factor 3: Investment Profitability

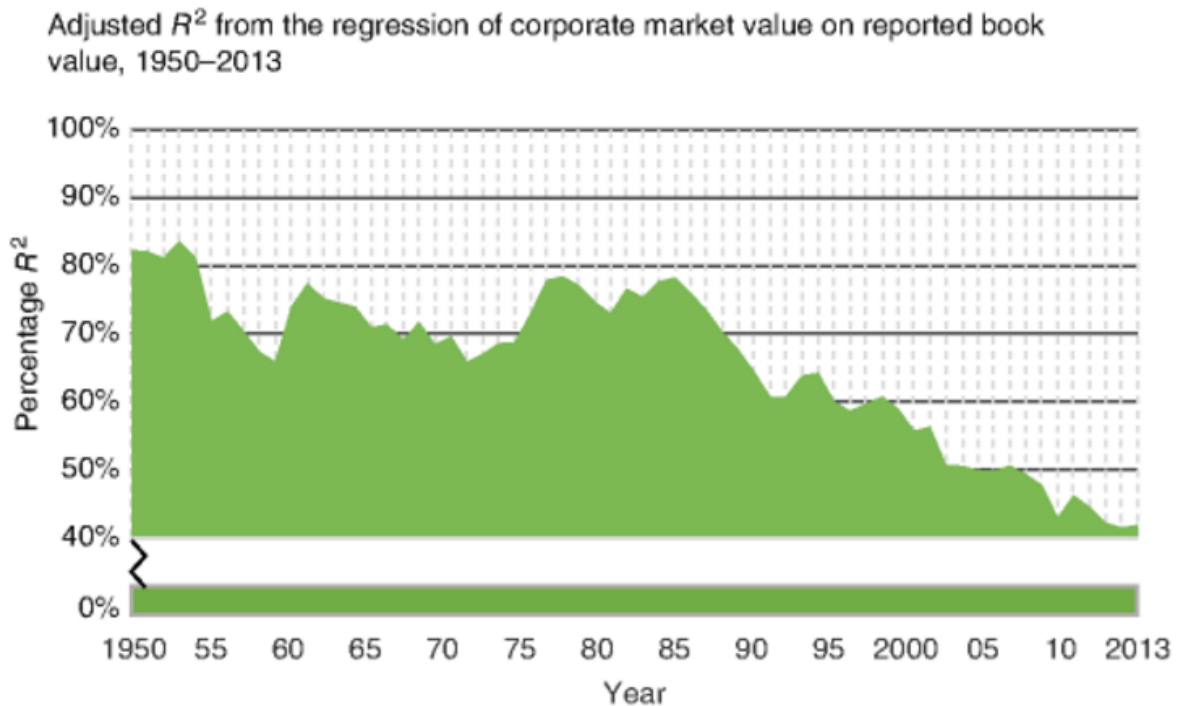
Opportunity

The investment industry itself may need to change to capture the complexity of the modern company, or risk losing the trust of the investing public.

Financial planning is predicated on the following assumptions

- Investing is a worthwhile activity, because the investor gets good returns.
- An investor's money is always welcome, because the main impediment to company growth is a lack of investment.

However, recent analysis by Lev & Gu [2016] finds that capital investment is becoming less important to growth, as they illustrate on page 35.



The chart shows that book value, a proxy for how much money investors gave the company, has become a less important predictor of corporate market value, a proxy for income and growth prospects. There have been several attempts to explain why investment capital is less important than it used to be:

- **Reach** – Platforms like amazon.com and eBay allow businesses to sell to customers worldwide without needing to invest extra capital to open branch offices [Parker, van Alstyne & Sangeet, 2016].
- **Decoupling** – Production capacity, like factories and cloud-based computer resources, are becoming easier to rent, so fewer businesses need to buy their own infrastructure, decoupling the company's income from its assets. This means businesses can rent more capacity as they get more customers, without needing investment capital to do it [Kelly 2016].
- **Profit margins** – The most profitable sectors of the economy, platforms and customer interfaces, derive value from its programmers rather than from its assets. They are less likely to raise money from sharemarkets, and that excludes ordinary investors. For example, Uber provides a worldwide ride-sharing service without owning any cars, which should allow it enormous profit margins [Goodwin 2015]. But it raises money privately [Crunchbase 2017]. This leaves ordinary investors to invest in the less profitable parts of the economy.

This has two implications. Firstly, financial planners won't be able to get their clients access to good returns, which means hiring a planner is less worthwhile.

Secondly, investors have been using the wrong data to make their investment decisions. They've been using standard financial reports, which assume profit is tied to the balance sheet. But in a world where balance sheets doesn't explain profit, we need other data to make investment decisions. Lev & Gu [2016] argue that we should be looking at R&D, customer turnover, and customer lifetime value.

This presents an opportunity for the industry to demand better reports. If the accounting profession is right, and the purpose of accounting is to help investors make resource-allocation decisions [Public Sector Accounting Standards Board, 1990], then accounting standards should be reviewed periodically to ensure financial reports include the variables with the most explanatory power at the time.

Issues

However, this will be difficult to implement. Financial reports are prepared by the accounting profession in a standardized way for comparability. Changing those standards can take years, and collecting and auditing the new types of data would involve great change in the accounting industry.

Impact

The financial planning industry faces great challenges to its business model. Not only do technological innovations threaten to replace its professionals with apps, but they also make its customers' income uncertain, changing the demand for financial planning services. Meanwhile, investment returns are likely to remain low as profitable companies need less capital investment. And as investors start to realise that they're using the wrong data to make investment decisions, trust in the investment process may wane.

However, perhaps robo-advisors can change that. Whereas human planners can only advise a few clients, robo-advice software can advise millions of people at once. Centralizing the power in the hands of the software company means they have the power to demand more information from the investment target, allowing investment to become more predictable for the few clients still investing.

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