California Management Review

TECHNOLOGY

Can AI Help Us Manage Our Crippling Cost of Debt?

by Pejman Makhfi

Staggering levels of debt prevent consumers across the country from building long-term security. Artificial intelligence solutions have the potential to guide consumers into better financial products and a lower overall cost of debt.

INSIGHT | NOTE 06 Feb 2019

Staggering levels of debt are causing consumers across the country to struggle with managing their finances and preventing them from building long-term economic security. Consumer debt totaled $13.2 trillion in the first quarter of 2018, an all-time high. In that mix, we saw credit card debt for the first time ever grow to over $1 trillion in January 2018.

Despite this massive debt load and widespread problem, consumers are not truly knowledgeable about their finances, debt management, credit scores and the resulting impact on their lives. For example, only 17 percent of millennials know that taking the simple step of reducing their credit utilization can help boost their credit score, according to a LendEDU survey.

Historically, there have been few resources created to help consumers effectively learn about managing debt, assessing the true cost of credit and making sense of the huge number of financial product options available.

Today, that environment is changing. Artificial intelligence technologies hold significant promise for helping consumers in a highly personalized way handle their debt and build a better understanding of credit products. Personalization of services, information management and decision support through these technology advances were detailed by Kumar, et al. in an upcoming California Management Review article entitled "Understanding the Role of Artificial Intelligence in Personalized Engagement Marketing." In discussing the rise of "specialized robots" that today assist with everything from banking transactions to serving coffee, the authors noted that AI-powered agents "learn more about us and our needs and improve in performing their tasks. That is, they provide a personalized service that uniquely matches the needs of every individual … Such technologies actively shape our daily lifestyles, which is accomplished through personalization."

The application of this type of advanced technology is rapidly spreading into the world of personal finance. In the process, it is disrupting the financial services industry by changing nearly every aspect of the business, from investment management and product marketing to lending and underwriting.

Work in the area is still developing, but I already see a number of ways AI-powered solutions can help existing and potential borrowers, while fundamentally changing how the credit industry does business:

- **Identifying trending changes in a consumer's financial or credit situation** that will have an impact on their ability to manage existing debt or get the lowest cost offer for new credit. In our age of automated payments and online information delivery, many more consumers have their financial lives on autopilot and may not realize shifts in their habits. AI-tools can help them recognize trending changes and new spending needs early, so they can be addressed before they have a negative impact.

- **Predicting credit score changes and financial impact over time** from actions taken today and even life events. Seeing the projected potential effect of various decisions can be a powerful driver for many consumers in making behavior changes and choosing between options. Also they can be better prepared financially by knowing how major life changes like marriage, divorce and having children may impact their financial profiles. Current AI-powered tools are already predicting likely future credit score changes and interest rate shifts.

- **Analyzing and predicting the most effective actions.** Once consumers recognize a need for action, making a decision around what to do next can be challenging. As Kumar, et al. noted, "when consumers are faced with a non-routine (or less frequent) decision, it is likely that they would seek more information to assuage their concerns. Seeking and processing large amounts of information can lead to 'information fatigue' and potentially an unsatisfactory decision-making process." AI-powered advisory tools help consumers avoid this problem by showing them which steps should help the most in achieving their goals. These robo advisors do this by considering the individual's specific situation, simulating many scenarios and then ranking the outcomes by impact. As a result, consumers can make decision about their finances without "experiencing the dysfunctional consequences of [information] overload."

- **Coaching consumers on behavioral changes.** Just like personal trainers, AI-powered financial advisors can nudge, recognize actions and reward positive steps. This might include recommending best time to pay bills, identifying mishandled spending and reminding about payments. The virtual advisor can also propose course corrections when necessary based on the person's goals and individual situation.

- **Keeping alert for opportunities suited to each individual.** AI-based tools can predict a person's probability of getting approved for different financial products. With that knowledge, AI-powered assistants can watch for the most relevant options and pass them along.

- **Expanding the opportunity for credit to more consumers.** Machine-driven scoring models allow better reviews of outlier cases when a potential borrower's basic profile might score on the edge of traditional measures. The models can include many more data points and new types of information in an evaluation. The relatively new *VantageScore 4.0* and Fair Isaac Corporation's *UltraFICO* are examples of the AI-driven models already at work. Many expect these new scoring models to open up access to credit for consumers with less credit history.

- **Identifying potential reporting errors.** Virtual advisors can also protect consumers from surprises by actively watching credit report changes and flagging items that seem incorrect. Having that information well before applying for an extension of credit provides ample opportunity to pursue corrective action.

Looking Ahead

Advances in technology such as transfer learning and reinforcement learning are likely to enhance the ways AI-driven solutions can learn from individuals' behaviors and aid in debt management. Over the next two to three years, I expect to see virtual financial advisors, with specialties in debt management, emerge and become an essential resource for the majority of millenials households with debt.

Certainly, the growing capabilities of AI-powered tools are increasing their utility and appeal. Plus, consumers are likely to turn to AI-powered advisors as the complexity and variety of financial products continue to grow. Potential borrowers will find it more difficult to understand their options and effectively select the product that is truly right for them. Financial robo advisors will be able to use personal data and credit profiles to support decision making and offer very personalized recommendations that include a tailored impact analysis.

There's no doubt that we must find better ways for all of us to understand the risks and responsibilities of using credit. AI-technology has the potential to allow creation of solutions that process more detailed information and provide customized advice for a borrower's specific needs. As these technology-enhanced tools continue to emerge, we'll all have even more opportunity to make smarter decisions about managing our debt.

Pejman Makhfi Follow

Pejman Makhfi is the Chief Technical Officer for Credit Sesame, a credit monitoring platform with more than 10 million members. He is a leader in the fields of Business Process Management and Knowledge Modeling and has founded several successful startups.