

The Hunt for Persuadables

Improving healthcare interventions with important lessons from the commercial sector

CONTENTS



INTRODUCTION



THE HUNT FOR PERSUADABLES



WINNING INTERVENTIONS



REAL WORLD RESULTS



IMPLICATIONS & CONCLUSION

ABOUT THE AUTHOR

Scott Setrakian

Vice Chairman,
Foundry.ai

Scott leads Foundry.ai's San Francisco office. Prior to joining Foundry.ai, Scott was co-founder and Managing Director of Applied Predictive Technologies. Previously, Scott sat on the Board of Directors of Mercer Management Consulting and ran the firm's global Oil, Gas, Chemicals, Pharmaceuticals and Process Industries Consulting Group. Scott received an MBA and an A.B. in Human Biology from Stanford University. He sits on the Board of Directors of the Buena Vista Funds, the William Saroyan Foundation and the San Francisco Zoo.

ABOUT CURIA.AI

Curia.ai

*A Foundry.ai
Subsidiary*

Curia helps healthcare companies facing increasing costs of care optimize patient, member and clinician interventions focused on improving value-based outcomes. While risk modeling has long guided resource allocation decisions, less rigor has been applied to determining who is most likely to respond favorably to intervention. Curia is changing this.

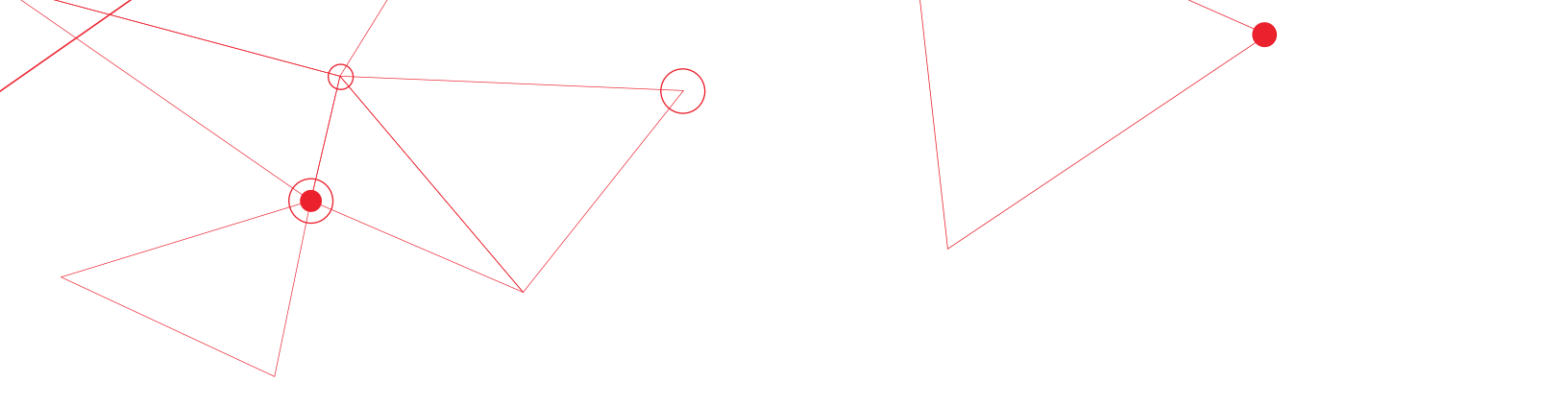


INTRODUCTION

In 2012, Atul Gawande’s groundbreaking article “What Big Medicine Can Learn from the Cheesecake Factory” was published in THE NEW YORKER magazine. Dr. Gawande captured Cheesecake Factory’s relentless, scientific approaches to providing consistent high quality while maintaining low costs. He then compared those approaches with the inchoate attempts that the medical community was making to realize the quality improvement and cost reduction opportunities presented by its consolidating delivery structure.

Dr. Gawande’s presented his theme in an upbeat, constructive manner, and his message was clear: the healthcare ecosystem can learn some very valuable lessons from outside its boundaries, and realize substantial benefits by tailoring those lessons to the industry’s own unique requirements and challenges

The following week, THE NEW YORKER published letters written by MDs in response. Many were hostile. Criticisms of best-practice sharing, in particular, ranged from charges of “one size fits all medicine” to predictions that brilliant practitioners would so resist a mandated sharing of best practices that they would leave the field of medicine en masse.



Nonetheless, in the years that followed, the industry has slowly made some progress in identifying and propagating successful practical guidelines to improve both outcomes and efficiency in some corners of its ecosystem. The trend continues at a measured pace.

We founded Curia.ai after spending over 20 years assisting major players in commercial industries to build and implement programs that improved profitability by influencing customer engagement and satisfaction. Some of our work focused on creating the types of processes described by Dr. Gawande at The Cheesecake Factory. Other work, the topic of this white paper, focused on creating programs aimed at influencing consumer behavior. Engineering these programs for success is complex and can make the difference **between profits and losses of millions of dollars.**

We have spent much of the last several years adapting some of the successful approaches that commercial companies use to shape consumer behavior to drive value in the world of health care.

Some in the health care community have responded to our ideas in manners reminiscent of the letters to NEW YORKER in 2012. “This is medical science, not 40%-off sweaters and Taco Tuesday;” “One cannot begin to engage the complexities of patient management without a medical education;” “We diagnose and treat ... we don’t promote.”

Others have been more open-minded, and willing to explore whether any of the approaches and tactics employed by large consumer businesses can provide valuable lessons to providers, health plans and life sciences companies.

We believe that deepening the understanding of how patients can be influenced to take better care of themselves can drive significant improvements in patient well-being, provider productivity, and the financial performance of entities across the healthcare ecosystem.



We believe that deepening the understanding of how patients can be influenced to take better care of themselves can drive significant improvements in patient well-being and provider productivity.

These lessons need to be adapted to the specific realities and complexities of health care, but the scale of the opportunity is massive, and success levels achieved in commercial industries would translate to tens of millions of dollars in annual value creation for payers and providers. They would also translate into substantial improvement in the well-being of countless patients.

Early adopters are showing that these lessons are worth thoughtful consideration.

THE HUNT FOR PERSUADABLES

Any intelligent program that is meant to drive a human response needs to have a defined, measurable objective: that a sufficient number of people will change behavior in a way that justifies the program's human and economic investment.

This challenge is as relevant to a healthcare provider executing an outbound RN calling program designed to convert undesired ED visits to PCP telehealth visits as it is to a quick serve restaurant running a 2-for-1 special on Vegas burgers.

In the case of the fast food outlet, the idea is that the price program will attract new customers who will continue to patronize the restaurant after price returns to

normal, in sufficient numbers to pay back the loss in margin suffered during the promotion. In the case of the calling program, it is hoped that a sufficient number of patients will convert to PCP telehealth to pay back the cost of the RN time invested in the phone calls.

Within a specific marketing tactic, or promotion, or healthcare behavioral intervention, there are four types of individuals whose behaviors will ultimately dictate the success or failure of the program:



Persuadables

These are the individuals we are always looking for – customers or patients who will take the input and respond as we hope, but would not have responded if we had not run the promotion or intervention.

When the fast food chain launches a two for one deal on Vegas burgers, these are customers who would not have come to the outlet without the incentive, but they:

- came when they saw the ad;
- bought two no-profit Vegas burgers for the price of one;
- also bought some high margin fries and drinks; and
- had such a good experience that they returned to the outlet frequently, after the promotion expired, and became profitable ongoing customers

Through the lens of medical interventions, these are the patients that start taking their medicine again consistently when contacted with adherence encouragement, start walking more when told of the benefits of daily exercise, and embrace telehealth in lieu of ED visits when RNs call and explain the benefits.

If all customers and patients were Persuadables, then these sorts of programs would be easy to design and implement. But there are three other segments that detract from a program's efficiency:



Sure Things

These are customers and patients who seem to be terrific ... because they are. They are going to behave as hoped regardless of the RN call or the burger promotion.

They are already behaving as hoped (or are about to), and they do not need an advertisement to make a new visit to the fast food restaurant, or a reminder to take their prescriptions. Therefore, any resources spent to get them to perform are wasted – they were going to perform anyway.



Lost Causes

These are the converse of Sure Things ... customers or patients for whom this particular offer will just not work. They could be customers who despise Vegas Burgers, or patients who simply refuse to speak on the phone with RNs. The money spent on the effort to contact these customers is a deadweight loss.

Importantly, Lost Causes are not lost under all circumstances. There might be a different product on special, or a different contact medium or message that will resonate and drive a favorable response. But for this specific tactic, promotion, or intervention in question ... it simply won't work.



Sleeping Dogs

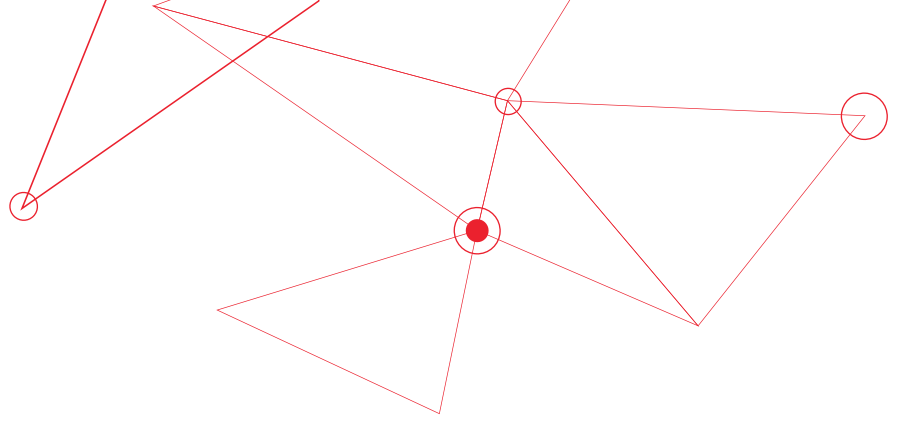
This last segment is usually the smallest but also the most unexpected ... and expensive. These are customers or patients who would have taken the desired action if the offer or engagement tactic had not been extended, but instead they take an undesirable action because of it.

An example is a fast food customer who never saw the ad for the Vegas burger discount, went to the restaurant ready to buy a full priced meal, saw the low-priced burger deal on the menu board and ordered that instead. In this case the promotion caused margins in the store to decrease. (In fact, some quick service restaurants hide their promotions on their in-store menu boards, so that customers who weren't enticed into the restaurant by the discount won't notice them.)

Another example is the patient who was taking his or her prescription reliably but, when contacted to ensure adherence, took the message as social proof that people simply stop an unpleasant course of treatment, and stopped.

Sleeping Dogs must be monitored carefully, as their perverse impact can turn an otherwise successful program into a losing effort.

When providers and payers design interventions that are based on practical good sense, but do not comprehend the presence and size of each of these four segments in their target population, they run the risk of unsuccessful program results.



WINNING INTERVENTIONS

This is the most exciting time in history for medical interventions, with the integration of electronic medical records, social determinants of health and advanced analytics. Never before have providers and payers been better equipped to understand patient by patient which interventions can drive changes in behaviors that lead to significant improvements in outcomes and efficiency, in a timely fashion. The range of intervention objectives is wider than ever before and includes, for example:

Encouraging individuals to take recommended preventative care actions

Improving adherence to course of treatment and care management

Converting unnecessary ED use into alternative care solutions

Practitioner alerts to manage chronic diseases, e.g., turning unplanned into home dialysis

Reducing avoidable hospital admissions and early readmissions

Improving practitioner and patient outreach to drive biosimilars pull-through

However, for these interventions to succeed they must reach a sufficient proportion of ‘Persudables’ to generate acceptable response rates.

The good news is that medical science and marketing science are beginning to intersect, and solutions to this problem are developing. Collectively called “Impactability Software,” these tools incorporate leading-edge AI techniques and are designed to project the response rate for any intervention by patient. These predictions have been shown to roughly double the frequency of Persudables engaged by new interventions.

These solutions combine three relevant dimensions:

1. DATA

The software integrates and automatically updates a wide-ranging dataset that establishes the basis for driving predictive analyses, including:

- large-scale patient-level attribute and activity data;
- social determinants of health data; and
- response rate data from past interventions

The data model must be able to manage and integrate datasets that are massive and often noisy, received from multiple internal and external sources on different time series cadences. The data science in the model must also be able to accurately consolidate myriad codes into a set that is simultaneously reliable, coherent, manageable, and useful.

2. ANALYTICS

The software employs a structured ensemble of causal inference heuristics combined with advanced machine learning techniques. These approaches produce Impactability projections for any patient population, for any message / medium combination, with accurate measures of statistical confidence to provide the reliability necessary to drive action.

The perfect analytical approach to determine causality would be the application of the scientific method, however the number of observations (and their lack of consistency) are insufficient to support reliable test and control group randomization.

3. PROCESS

The software supports the consistent application of the steps required to rapidly, accurately, and efficiently identify patient populations that will provide the optimal combination of impact and response rate, and maximize the effectiveness of the intervention.

The process also has to be sufficiently clear and explainable to support alignment between the executive and execution teams, and to support investment decisions with confidence.

With the ongoing expansion in EHR availability, data scientists and software engineers are developing Impactability Software that leverages health data to provide step-change improvements to the paybacks of patient-level interventions, and providing multiple benefits:

- For Interventions that are already successful, dramatic increases in patient response can be achieved with the existing budget;
- For some Interventions that are not otherwise economically affordable, improvements in response rates drive the programs above break-even, allowing patients, payers and providers to realize program benefits;
- Most importantly, ongoing application of processes that improve intervention success can become a compounding capability for the organization. As the enterprise becomes more experienced in the technology and processes involved in improving impactability, it is able to extend the type, scope, scale and frequency of its interventions. This leads to increasing benefits that expand exponentially over time; benefits that include significant improvements in the number of patients reached by each intervention, and substantial increases in patient well-being, and program efficiency, capacity, and financial results. It also broadens the landscape of applications for which interventions can be considered.

Real World Results

A value based care provider has built skills to improve identification of Persuadables among target intervention populations, and has recognized material improvements in its program performance. When Impactability modeling was overlain on prioritized patient lists, this provider achieved the following results:

REDUCED ED OVERUSE



Their RN calling program improved its net margin per call by nearly 300%, driving a much larger set of patients favorably impacted by the program

INCREASED TELEHEALTH CONVERSION



A one-off outbound mailer achieved target benefits through a focus on Persuadables, reducing cost of care by nearly \$1MM

PREVENTED AVOIDABLE DISEASE COMPLICATIONS



A targeted Unplanned Dialysis intervention reduced such dialyses by 10% by improving the rate at which at-risk patients were persuaded to undergo diagnostic testing. This resulted in a 500% ROI on the diagnostic testing program

BETTER MANAGED CHRONIC CONDITIONS



Chronic Care Management costs reduced by 30% per patient, by successfully prioritizing the interventions on Persuadable patients

Each of these programs drove substantial improvements in the number of patients successfully treated, as well as investment efficiency. They are best interpreted not as individual projects, but rather as the ongoing compounding benefits caused by the creation of skills to better measure Impactability before intervention investment.

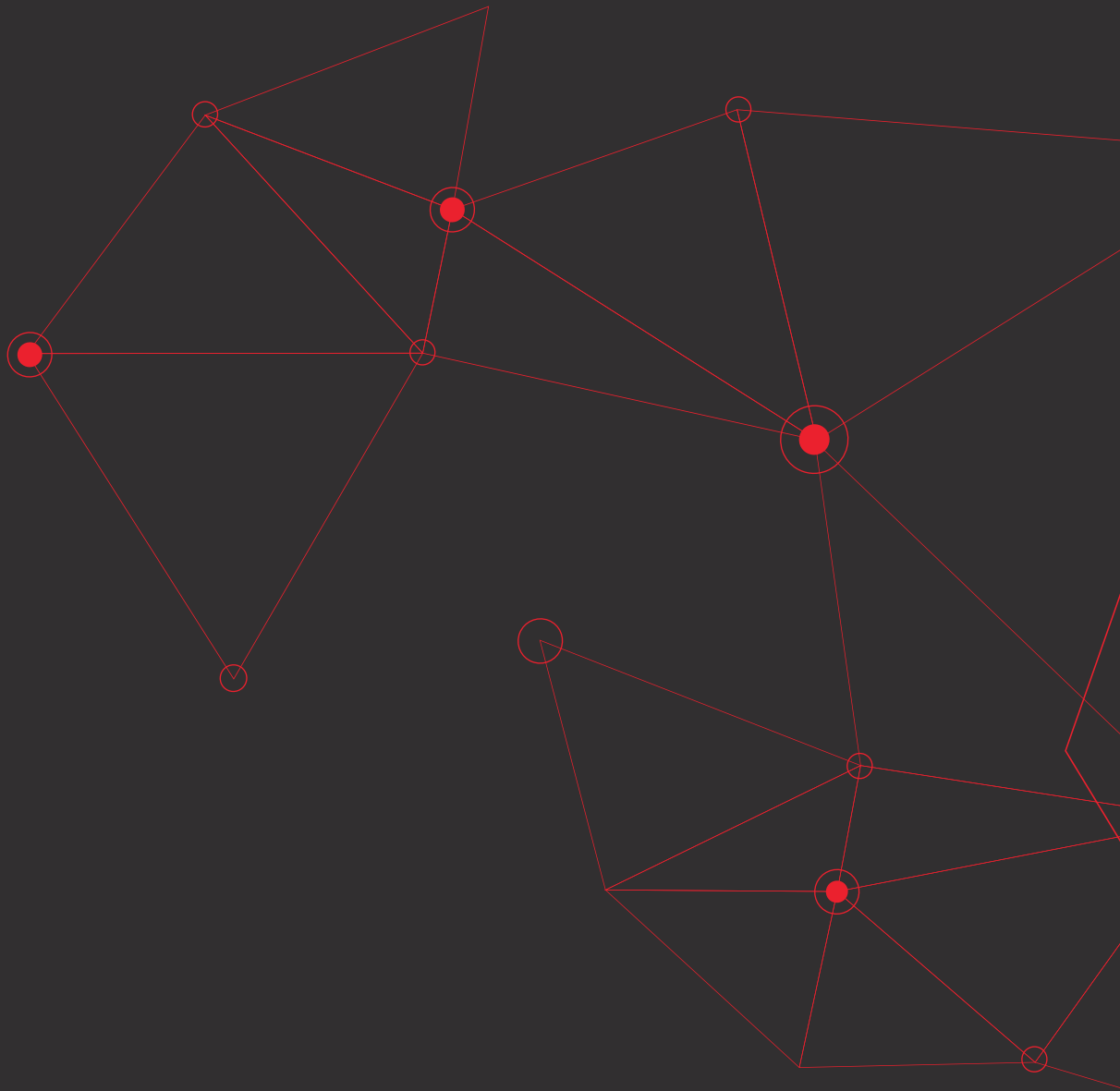
IMPLICATIONS & CONCLUSION

Modeling that predicts consumer response to commercial initiatives has been a staple of competitors in every customer-facing industry for well over a decade. Retailers, airlines, banks, insurers, hospitality and dining chains, and more have met the challenges of integrating data, analytics and process to improve the outcomes and returns of their programs meant to affect customer behavior.

We at Curia.ai have played a leading role in the development of these techniques within the commercial industries over the last 15 years. In the first days there were companies that immediately recognized the advantages of applying these approaches, and that built skills that led to compounding returns and durable competitive advantages. Others resisted new solutions until they were proven out in the marketplace. **But today there is not a successful large scale customer-facing company in the USA that does not employ a version of this technology, to maximize returns on their marketing investment.**

The healthcare industry has been a laggard, and especially conspicuous in its lack of sophistication given both its scientific underpinnings and the enormous stakes involved. But there is a logical reason. Providers, health plans and life sciences companies have trailed behind commercial industries primarily due to the insufficiency of high-quality, longitudinal clinical data that is an essential input to the modeling process.

With the expansion in medical data, new technology is being developed to support better, smarter intervention decisions. The most effective application of these tools align with marketing and sales processes followed by commercial players, and there are specific ethical and operational considerations that must be met by healthcare players when applying these techniques. But the employment of these tools, which simultaneously provide better patient care and improved resource effectiveness, should not be controversial.



Foundry.ai

1920 L St NW, Suite 800
Washington, DC 20036

<https://foundry.ai>

<https://curia.ai>