Intelligent Software Development

Whitepaper

SimulAIt – A new approach to tackling customer churn and retention

SimulAIt for Churn and Customer Retention

ISD's SimulAIt mass-consumer modeling and forecasting platform provides a new and innovative solution to help reduce churn and improve customer retention. This paper briefly discusses the churn problem, provides an overview of SimulAIt, **explains how SimulAIt has been used to achieve 95% accuracy**, and identifies what data you might need to use, what outputs you can receive and how SimulAIt can be delivered to you.

This paper outlines how SimulAIt will assist you to:

- Better understand what influences your customer's decision making
- **Predict** and **Influence** the behavior of your customers
- Test, identify, and optimize strategies to reduce churn, maximize ROI, and reduce risk
- Evaluate past strategies
- Support your business case through better forecasts
- Develop informed and targeted micro-marketing strategies
- Assess the impact of disruptive factors

What are the Keys to Solving Churn?

Key factors in reducing churn and improving retention revolve around: understanding your customers; engaging with your customers; and service delivery.

The Vital First Step – Understanding your Customers

Understanding your customers is the first step towards finding the right solutions to address churn. Your customers are the ones that make the decisions – Do I stay or go? Do I buy again? Do I consume more or less? Do I recommend to others?

Do you clearly understand:

- The many different **factors that influence** your customers decision making?
- How **significant** these influences are?
- How your customers will **behave** and what **decisions** they will make, particularly in an environment that is highly competitive and continually changing.

If not, then how can you expect to **cost effectively and sustainably** reduce churn, increase retention and sales, and maximize your ROI on marketing and other strategies you adopt?

What Influences Customer Decision Making?

There are many factors that influence consumer decision making and buying behavior. Examples include:

- **Social**: Demographics, psychology, preferences, goals, culture, reasoning, marketing and market research, new communication media, social interactions, ...

- **Economic**: Price, financial position, expendable income, discretionary and nondiscretionary expenditure, financial costs/benefits, elasticity, ...
- **Environmental (physical/engineering)**: Innovation and new products, consumption/efficiency, age, size, functionality, weather, ...
- **Political**: Policies, regulation, constraints, programs, legal, ...
- **Competitive**: Local and global competition, new distribution channels, convergence of technology and markets, …

There are **millions of individual consumers with different characteristics and circumstances making different decisions in a constantly changing world**.

So much to consider! How can I understand what is important?

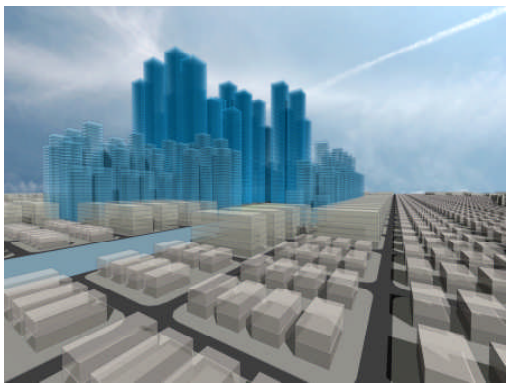
You could try and simplify your analysis and modeling of the decision making process. But if the answers are so simple then why is churn such a big issue? We have all seen that churn is not that easy to conquer and it is not an area where you can get ***sustainable*** results by just "throwing money or resources" at it.

It is better to analyze and understand churn first. To analyze churn properly you need tools and technologies that can handle the complexities and scale. This is where typical tools and approaches fall short. They often have limited capacity to handle non-linear, dynamic and human centric issues. Some struggle to scale up to effectively handle large customer bases – and thus users of these tools start to make broad and generalized assumptions to get around this issue. Many are primarily econometric tools and struggle to deal with the many different and complex types of data required to accurately model and predict human behavior. Others are just data analysis, mining and statistical tools which are ideal for observing what your customers are doing, but do not always give you the full picture into why your customers are making the decisions that they are making.

Here is where SimulAIt can help

SimulAIt is based on the human cognitive model and uses a dynamic multi-dimensional database, which allows the mapping and modeling of a wide range of complex social, economic, environmental and political data and behaviors.

Driven by population dynamics (via Census data), and the ability to model and simulate the reactions and behaviors of individual consumers, SimulAIt allows you to create detailed models of your customers. SimulAIt enables you to integrate the many factors and data types that impact on your customers' decision making, including incorporating your domain knowledge - because you know your customers best!



SimulAIt provides a powerful and scalable micro-simulation engine. SimulAIt has been used to efficiently model over two million households and four million consumers.

SimulAIt utilizes models that are specifically configured to suit the target environment and business problem. It provides the flexibility and rapid turnaround times to support the execution of multiple what-if scenarios, and the comparison and analysis of different scenarios.

SimulAIt can greatly assist you to analyze and better understand your customers in many different ways. SimulAIt allows you to answer a broader range of questions, and to isolate and understand the significance of specific issues and influences.

SimulAIt is a powerful yet flexible business tool that helps you to accurately predict – and explore options to influence – mass consumer behavior and decision making.

SimulAIt has been shown to be a highly accurate forecasting tool – **95% accurate**!

How can SimulAIt be applied to the Churn Problem?

SimulAIt can assist you to tackle and beat churn in many different and important ways.

Predict and influence behavior, and isolate and understand significance

SimulAIt allows highly detailed models of different consumers to be created, capturing many factors (variables) that impact on their decisions. This approach has been demonstrated to provide highly accurate predictions (validated models of greater than 95% accuracy) since it considers the many (social, economic, environmental and political) factors that contribute to consumer decision making.

SimulAIt also allows you to represent and model how different strategies – marketing, pricing, product or service strategies - may impact on each individual variable/factor associated in the decision making process. For example, consumers' purchasing decisions may be dependent on product price and features. Different consumers may value price and features differently. SimulAIt can allow you to test different product price and features (both your product and your competitor's products), and marketing strategies to communicate these product characteristics to different consumer types, to help you predict how different consumers' purchasing decisions will be influenced. This can help you to understand, quantify and optimize how individual strategies can influence your customers' decision making - by understanding how different strategies impact on specific decision making factors which ultimately influence your customers' decisions.

Analyze changing priorities and preferences

SimulAIt is driven by population dynamics, and can capture dynamic trends of factors associated with consumer decision making. These factors could include:

- changing trends in consumer preferences
- changing competition, product (feature/price) choices, and brand preference
- technology trends
- policy and regulation changes
- generational differences, and changing community and household norms and expectations
- the influence of the media and communications
- changing environmental and climatic conditions

SimulAIt has the ability to model and reason about consumer choice and preferences, which is dependent on the many (aforementioned) dynamic factors. Therefore, by incorporating these dynamic and complex factors associated with decision making, and consumer characteristics, SimulAIt can ultimately forecast changes in consumer priorities and preferences, as well as identify and quantify the specific influences/factors that have contributed to these changes.

Understand decision drivers and trade-offs

SimulAIt is based on the human cognitive model, which allows a wide range of social, economic, environmental and political data to be readily crystallized in order to create a detailed model of consumer decision making.

The models enable you to better identify, and gain insight, into your customers' decision making process, and the factors that influence it.

The modeling also allows the complex relationships associated with decision making to be represented and simulated, providing insight into previously unknown factors/drivers that impact on decision making (due to its complexity), or the

resulting emergent behavior of many consumers making specific decisions, to be observed.

Therefore, SimulAIt allows you to forecast decisions that are made by consumers, some of which may be counter-intuitive, and the drivers that resulted in these decisions being made.

Micro Segmentation

SimulAIt allows you to simulate individual consumers at a city, state or national level. This not only helps you to forecast which consumers (region, type, and over what time) are likely to make purchasing decisions (positive or negative) for your products or services given your proposed strategies, but also allows you to forecast how these consumers are expected to utilize your product, i.e. will they be a high or low usage/value customer, which may be dependent on, for example, the consumer's age, family size, income status, education level, job type, etc.

Therefore, SimulAIt allows you to segment and forecast the ROI of different consumer types at a very detailed level to enable better and more cost-effective micro-marketing.

So now I understand more about my customers. What next?

Evaluate Previous Strategies

You can use SimulAIt retrospectively to better evaluate the effectiveness of previous strategies.

What would you have achieved anyway? Can the changes be attributed to your strategies? Or other factors? Is it likely that the results will be sustainable?

SimulAIt can help you evaluate your previous strategies by retrospectively forecasting what would have occurred in the past if specific strategies were or were not implemented. This will allow you to quantify the effectiveness and ROI of your past strategies, and help inform future strategies.

Test and Optimize Proposed Future Strategies

Looking to the future, SimulAIt allows you to test and optimize future strategies through what-if scenarios, providing better forecasts and quantification of the effectiveness/ROI of your proposed strategies. SimulAIt's ability to support many what-if scenarios means that you can assess the trade off's between different strategies - e.g. one strategy may be effective for one consumer type, but ineffective for another.

You can use SimulAIt to run what-if scenarios to forecast how a campaign may ultimately influence consumer decision making, as well as isolate and quantify the effectiveness of specific strategies in the campaign. Importantly, this approach helps you to optimize your investment and effort, as well as manage your budgets (How many times have we seen incentive based programs "oversubscribed" and exceed budget – with no/minimal sustainable outcomes?).

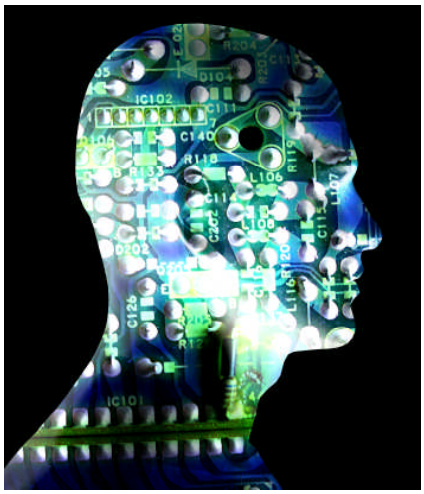
SimulAIt's detailed models can also help you answer a broad range of strategic questions around sales (e.g. demand and uptake), marketing, pricing, customer utilization, and capital expenditure.

Prepare and Support Your Business Case/ROI

You can use SimulAIt to help prepare and support you business case. The model's validation can be used to confirm accuracy, build confidence, and help de-risk your proposed strategies. The results of different scenarios can be easily incorporated into standard "Office" documents to explain and support your business case.

SimulAIt is a new approach? How can I be confident that it works?

The technology



SimulAIt's underlying technology has been used for many years in a variety of military and commercial applications to assist with complex (human-centric) problems. It is called Agent Based Modeling (ABM). ABM has long been used and proven to provide decision support and forecasting in areas such as: military war gaming; logistics, transportation and traffic; disease spread and epidemics; behavior economics; organizational analysis and workforce management; biology; emergency response; movie animation; and of course consumer behavior modeling.

Many leading research organizations around the world utilize ABM to better understand these complex systems, and to cost-effectively simulate/forecast how the system will respond to different strategies in a virtual model, before these expensive strategies are implemented in the real world.

Until recently the application of ABM to mainstream business and commercial issues has been limited. Quite simply, the computing power and data required has been a prohibitive factor. Now, with more powerful processors at lower costs, the ability to utilize global "capacity on demand" hosting and cloud computing, as well as the increasing capture and electronic storage of data by Government and business, the opportunity to utilize ABM to address common business problems has become a reality.

ISD have taken this a step further and we have created a product, SimulAIt, that streamlines the process yet retains the power and flexibility of ABM. SimulAIt's powerful micro-simulation engine, pre-built product features and rapid execution of complex models means that you can now utilize tools that handle the complexities of human decision making and mass consumer groups in an

effective and timely manner. This represents an opportunity for your business to take the initiative!

Where has the SimulAIt product been successfully utilized?

SimulAIt has already been successfully applied in many different industries to address a range of problems such as demand forecasting, demand management, water and energy consumption, retail product uptake, rebates, concessions and incentive programs, and budget management. Our clients include large utilities and government departments. And we can provide case studies regarding our projects.

We have validated our models with clients and our models have achieved over **95% accuracy**!

How to I use SimulAIt?

What Data do I need?

SimulAIt comes with populations dynamics (Census data and changing demographic trends) built in. SimulAIt models are flexible and extensible – there are no hard and fast rules around what data you must have, what you can and can't utilize, and the scale and detail of the model that you create. Model configuration depends on the data that is available, the business problems and questions you want answered, and the level of accuracy you desire. We work with you to utilize your data to its full potential to achieve your desired business outcomes.

Typically the following types of data will be incorporated into the model:

- Market research, economic research, demand and churn data, past strategies (e.g. marketing, pricing, sales model, significant events, competition)
- Your domain knowledge
- Any data that could provide insight into how your customers make purchasing decisions

How do I know what I can and can't model?

SimulAIt is **not** a black box. Our Model Design documents (and our new SimulAIt Online offering) provide you with complete visibility of the model – the data, the assumptions, the trends, and the parameters. You get to see and understand how the model is configured and why it works. You are then much better informed with regard to the potential to execute what-if scenarios by varying parameters, trends, assumptions and other components of the model.

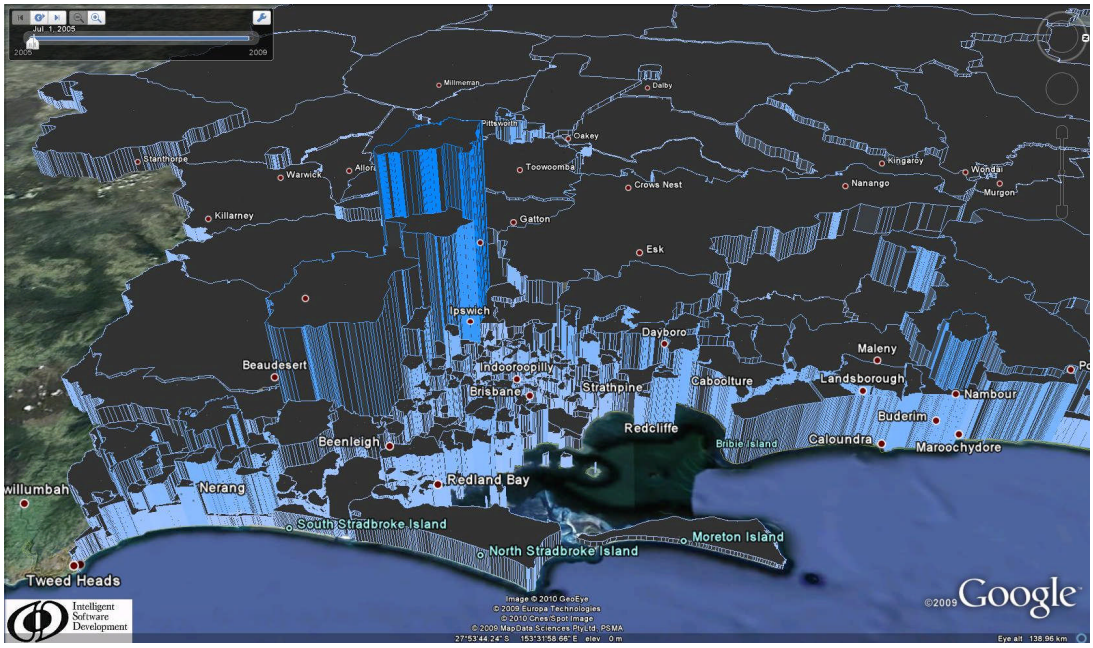
What outputs can I get?

SimulAIt produces a comprehensive range of outputs including, but by no means restricted to:

- Demand forecasts
- Revenue and/or expense forecasts
- Product take up and utilization
- Churn/retention rates

Results can be delivered in a range of formats to suit the nature of the model and your preference:

- Charts/graphs
- Excel (to support drill down , Pivot Tables)
- Data tables
- Results data (CSV, XML - for your own analysis and/or import into other systems)
- Mapping/GIS representations



How is SimulAIt delivered?

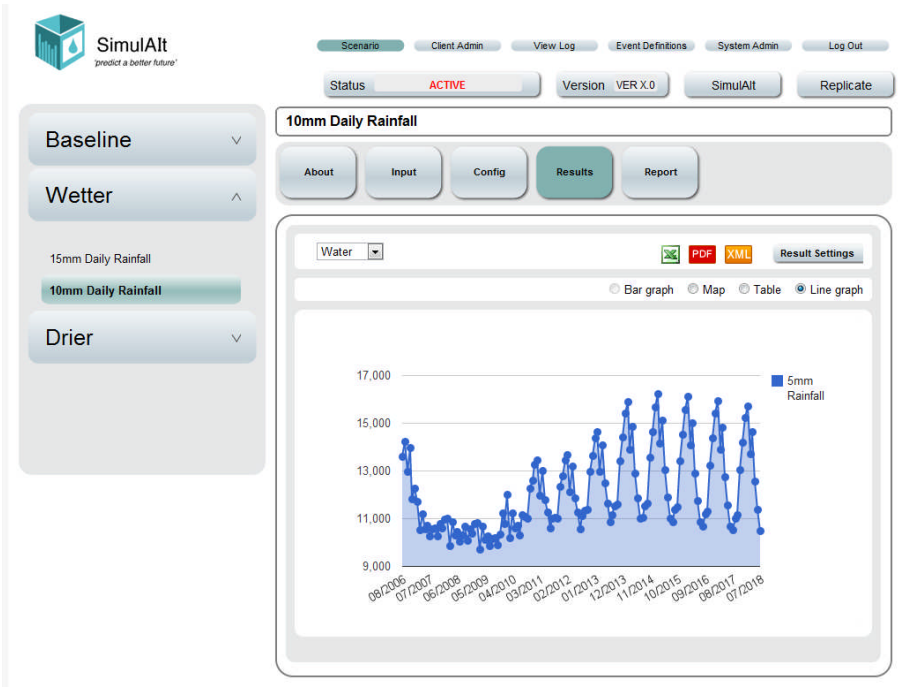
ISD and ISD's partners can provide you with a comprehensive services based offering. Our methodologies are proven and are designed to provide you with maximum visibility, control and flexibility. At a minimum, we provide:

- Model Configuration
- Model Validation
- Execution of Scenarios and delivery of results

If you require, ISD and our partners can assist you with related activities such as:

- Data gathering and analysis
- Testing of potential strategies
- Analysis of Results
- Recommendations
- Execution of strategies

We are also releasing SimulAIt Online – an internet based offering to allow our clients to adopt a self service model. SimulAIt Online will provide our clients with even more control and flexibility.



Want More Information?

Looking for case studies of what SimulAIt has achieved for our clients?

Have some specific questions?

Want to know about SimulAIt Online?

Want further information?

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