In today's highly saturated credit market, banks and financial institutions are challenged to grow and remain profitable in the face of stricter regulation, changing customer behavior, and increasing competition. Credit pricing is a key lever to gain new clients while ensuring profitability, optimizing risk, and building sustainable competitive advantage.

Lenders need to understand the price elasticity of consumer demand for credit to arrive at the optimal price that maximizes profitability. A well-rounded pricing optimization approach that considers customers’ willingness to pay and the underlying risks is required.
**Value based pricing optimization**

Genpact’s proprietary framework, PRIZMsM, estimates the total value of profit from the loan across its entire lifecycle after incorporating price sensitivities and then maximizes this value subject to business constraints to arrive at the optimal interest rate.

This solution identifies possible “paths” that the loan can take resulting in cash inflows (revenues) and cash outflows (costs) such as the following:

- Write-off due to default
- Pre-payment
- Cross-sell/upsell
- Full-term maturity

The probability of each path is estimated and combined with the corresponding net cash flow stream to arrive at the value of the loan that forms the objective function in the optimization framework.

The value of the loan is significantly influenced by how likely the customer is to accept the loan at different interest rates. Genpact’s price optimization solution also weaves in price elasticity by modeling the propensity of the loan applicant to accept the loan at the offered rate and incorporating the price elasticity in the optimization framework.

PRIZMsM optimizes pricing through maximizing the value of the loan, a combination of all the likely paths the loan can take and the price elasticity. Thus, it is a powerful lever for banks to grow and to improve the bottom line of their consumer credit portfolios.

The optimization framework in PRIZMsM can be tailored to specific goals for the given loan portfolio, such as profitability growth, volume growth (and increase in market shares), or both.

PRIZMsM features a customizable user interface that helps users evaluate and understand the tradeoff between alternate pricing scenarios at the loan and grid levels. It also features a data layer and an analytical reporting layer, which are completely customizable.

---

### Features and benefits

- **Tailored to goals of business** - improve margins and/or increase market share
- **Sophisticated GUI** ensuring user flexibility
- **Analytical reporting layer** for continuous monitoring and revision of pricing

---

### PRIZMsM – Price optimization framework

<table>
<thead>
<tr>
<th>Input models</th>
<th>Price optimizer</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default likelihood, pre-payment likelihood, cross sell/up sell likelihood, response propensity</td>
<td></td>
<td>Optimized pricing</td>
</tr>
<tr>
<td></td>
<td>Profit calculation, Expected cash flow model, Price optimization algorithm</td>
<td>GUI for scenario analyses, refreshing models</td>
</tr>
</tbody>
</table>

---

- More holistic than incorporating just risk of default
- Taking into account price sensitivities to arrive at more effective pricing
- Incorporating value from cross sell/up sell
- Modeling uncertainties around likely loan lifecycle scenarios, prepayment and full term
**Genpact approach**

- Different loan performance paths are identified, such as full-term maturity, pre-payment, or write-off due to delinquency, given the context of the specific loan portfolio.
- Historical data is used to model the relative likelihood a loan will follow each path. The assumption is that loan performance depends directly on, among other factors, the interest rate.
- Price elasticity is also modeled to estimate the likelihood of loan being accepted at different price points.
- Expected cash flow models are built based on revenue and cost data associated with each loan.
- For each path, the cumulative net cash flow or the net income is weighted by the relative probability and combined with the price elasticity to arrive at the expected profit from the loan.
- Since each component of the estimated loan value is a function of the interest rate, the optimization framework arrives at the interest rate that maximizes this expected value of the loan.

  \[
  \text{Objective function} = \sum_{n=1}^{N} \left\{ \text{OBSERVED} \left\{ \left( \sum_{j=1}^{J} p_j \times \text{CASHFLOW}_j \right) \cdot \left( \sum_{k=1}^{M} \text{EXPENSES} \right) \right\} \right\} \times r_n
  \]

  Where \( j \) represents loan performance paths, \( p \) represents probability of paths, \( k \) represents type of expenses, and \( r \) is the propensity of loan take-up of \( n \)th applicant.

- The constraints needed for the optimization framework are based on business inputs that draw upon specific market and geographic contexts as applicable.

Genpact’s advanced optimization algorithm ensures that incremental interest rate trials converge on the optimal interest rate, where the value of the loan is maximized.

PRIZM℠ can be applied to the overall portfolio or to individual grids, where the grids can be defined by combinations of risk and sensitivity.

**Deployment and improvement**

The optimized pricing structure generated by PRIZM℠ is deployed in an environment that supports champion and challenger testing. The optimized pricing (challenger) is tested against the existing pricing structure (champion) in terms of customer response, and changes are made accordingly to tweak the new pricing structure.

The optimized pricing is monitored for performance in the face of changes in market positions, hurdle rates, business goals, and customer profiles. Any change in these factors would warrant re-optimizing the pricing.

**Genpact advantage**

Genpact has been serving the banking and financial services industry, including several Fortune 500 clients, for more than 15 years.

As one of the largest analytics providers worldwide, with more than 6,500 dedicated associates, Genpact combines Data-to-Insight and Insight-to-Action processes to bolster growth, optimize cost, manage risk, and achieve higher customer satisfaction for clients in the financial services industry.

Genpact analytics services have been consistently ranked as a leader in this space (HfS's **2013 Blueprint Report on Enterprise Analytics Services**).

We industrialize “analytics” by providing scale, flexibility, and domain knowledge, thus empowering analytical decision making in all levels of our client organizations.

The value delivered to our clients is reflected in consistently high customer satisfaction scores as measured using the Net Promoter Score (NPS) framework.

**Generating impact**

Genpact believes that the real value of analytics is derived when it is made available at an industrial scale. We leverage data across organizational silos and embed analytics deep within the business process so that analytics is accessible at all levels. Some examples of how we have provided business impact through analytics consulting services and solutions are highlighted below:

- Approximately $500 million in incremental sales and approximately $65 million in income impact was delivered through targeted acquisition
and account management strategies for a US consumer finance major
• Approval rate increased by 9% and more than $60 million in net income benefits through a new origination scorecard and an improved loss forecasting model for a global auto finance major
• Our banking analytics services enabled 60% savings on implementation cost, with $6 million in savings and 40% enhanced accuracy on a Know Your Customer (KYC) function for a leading Australian bank
• 15% additional capacity in underwriting and portfolio management functions for a large US regional bank by applying banking analytics solutions

About Genpact
Genpact (NYSE: G) stands for “generating business impact.” We architect the Lean Digital enterprise through a unique approach based on our patented Smart Enterprise Processes (SEP) framework that reimagines our clients’ middle and back offices to generate growth, cost efficiency, and business agility. Our hundreds of long-term clients include more than one-fourth of the Fortune Global 500. We have grown to over 70,000 people in 25 countries, with key management and a corporate office in New York City. We believe we are able to generate impact quickly and power Intelligent Operations for our clients because of our business domain expertise and experience running complex operations, driving our unbiased focus on what works and making technology-enabled transformation sustainable. Behind our passion for technology, process, and operational excellence is the heritage of a former General Electric division that has served GE businesses since 1998.

For additional information, contact, banking.solutions@genpact.com and visit www.genpact.com/home/industries/banking-financial-services

Follow Genpact on Twitter, Facebook, LinkedIn, and YouTube.

© 2015 Copyright Genpact. All Rights Reserved.