

Early Warning System

Reducing flows of vulnerable customers into collections



A strategic capability to win in the market place

Lenders are facing monumental pressures in managing existing customer relationships and the risk of delinquency in the light of global pandemic. Whilst non-performing loan levels have been falling in recent years, organisations are now facing new threats to portfolio profitability.

In such context, being able to understand the financial situation of each customer beforehand and then act upon it with foresight has become a definitive source of competitive advantage.

Prevention is better than the cure

Now more than ever, pre- and early delinquency management strategies play a key role in managing debt. Forward-thinking lenders are making the transition from a reactive environment to one that incorporates a proactive pre- and early collections activity to try and reduce the flow of cases into the collections system.



The power of an Early Warning System

An Early Warning System (EWS) covers the preventive and very early collections phase within the customer life cycle. It incorporates the practice of proactively identifying and contacting customers who are currently up-to-date or just became past due, but have a predicted high risk of becoming (seriously) delinquent in the very near future.

An EWS delivers early information on expected deterioration of the client's financial situation and integrates internal data as well as external data to increase its effectiveness.

Approaching the deadline for the payment, warning indicators are created and distributed across the risk management systems to act proactively and, if necessary, to get in contact with the client before any trouble occurs. The aim is to aid identification of customers likely to become (more) delinquent and target appropriate actions that:

- Encourage payments - ahead of potential delinquency or becoming increasingly delinquent
- Minimise "at risk" exposure
- Manage potential high risk debt - by sensitive treatment of customers at an earlier stage of the process

The role of EWS within the customer life cycle



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The key requirements for a State-of-art EWS

1 - Knowing your customers to identify preventive collections actions

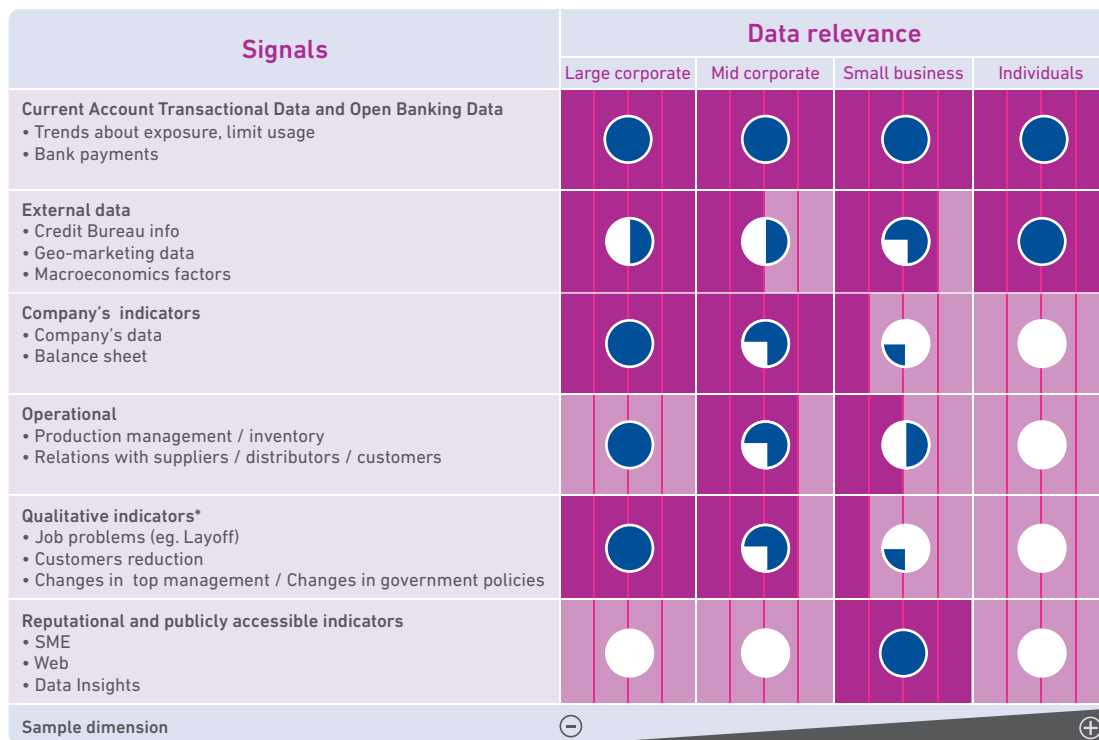
A holistic view of the customers is a key element in the EWS. For many organisations the internal information is the only perspective they have on an individual customer. Some of this information is provided at the point of application and may be out of date, when needed at later stage. However, it will include data that, if still valid, will allow affordability to be assessed as well as default risk score.

Many organisations continue to use this potentially out-of-date view in their on-going risk assessment procedures on the assumption that, either changes have not occurred, or that they have minimal impact. The reality is that application information alone is insufficient for a pre-delinquent strategy to be effective, as circumstances do change and when customers are under stress this change can be drastic and fairly rapid.

The identification of changing behaviour patterns that are indicative of financial difficulties - before a missed payment occurs - is vital if a business is to make an early pro-active intervention.

Looking at current internal information can give some indication of changes in the customer's situation; however, external credit bureau data will add significantly to the behaviour recognition process and it is essential to the implementation an effective pre-delinquency management strategy. General best practice is to combine various information available to enable a robust and comprehensive assessment of risk. In particular, using external information, like credit bureau info, geo-marketing data and macroeconomic factors (see Box 1: *The use of macroeconomics data in the Early Warning System: Portfolio Forecasting*) can add much value in the identification of high-risk segments and help prevent losses by declining unacceptable risk at application level, optimizing limit management, excluding risky customers from any up-sell or cross-sell campaigns.

An optimum EWS, therefore, should consider the weight in predictive power of different information areas along the various portfolio segments:



Discriminant Power
 ● High ● Good ● Medium ● Low

Availability
 ■ High ■ Good ■ Medium ■ Low

*The qualitative indicators are particularly useful as customers size increases (i.e.: higher contribution for the Large Corporate segments)

The use of macroeconomics data in the Early Warning System: Portfolio Forecasting

Increasingly, regulators are asking for future economic conditions to be built into loss forecasting systems. Portfolio Forecasting methodology extends this concept to the other key performance measures of a credit risk portfolio. Economic drivers are combined with the individual customer risk profile, their current level of borrowing, payment behaviour, levels of indebtedness and affordability position to give a forward-looking view of a customers' behaviour.

By modelling changes in the credit portfolio and market trends by historical economic trends, a relationship between the portfolio performance and the external factors is established. Using this relationship along with credit policy and risk appetite, forecast changes in the economy can be used to predict:

- Arrears rates
- Settlement / redemption rates
- Collections performance
- Charge-off rates

Through a deep understanding of how customers and therefore portfolios are likely to respond to changes in market and economic conditions, financial institutions are better placed to design the right strategies and to apply the right actions at the right time. It will also help lenders to meet regulatory requirements: identify and understand future risks so they can plan and mitigate for them, creating a more stable economy and marketplace.

Experian's distinctive methodology allows portfolio managers to understand the sensitivities of their portfolios to significant economic change and the implications for provisioning, capital allocation and regulatory compliance. When developing forecasting methodologies, it is vital to ensure that any programme adequately addresses a range of economic scenarios for both regulatory and managerial purposes.

Rather than using generalised macroeconomic assumptions, extensive and detailed economic models allow alternative scenarios to be defined explicitly. These models are designed and implemented to maximise portfolios value and to meet increasingly demanding regulatory requirements in a coherent and transparent way.

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2 - Using advanced analytics to enhance your strategies

The development of a robust model, which combines internal and external data, can enable a rapid response to changing behaviours and give enough time to take remedial actions on that customer or design an optimal collection strategy.

Predictive models used in the EWS, compared to the scorecards used in other phases of client life-cycle, have some specific features:

- A relatively short outcome period: an EWS model usually tries to predict the behaviour for the next 1, 2 or 3 months

- The target variable (the predicted behaviours):
 - Within Pre-Collections: the probability of becoming at least one day past due
 - Once within early stage collections (Stage 1): the probability of payment or rolling forward to Stage 2
 - Self-curing: returning back to being a performing rather than non-performing loan

Some other warning indicators or scores might even come from Credit Bureaux (see Box 2: *Customer events notifications - Experian Triggers*). They can be integrated into the statistical model or dealt with separately by applying rules and segmentations on top of models.

Customer events notifications - Experian Triggers

For an effective early warning solution, it is important to identify key data attributes that show correlation with default or stress scenarios. Triggers can represent powerful predictors that capture financial distress and allow the bank to act accordingly.

Experian has developed Triggers services that proactively watch the customers' behaviour, monitoring in almost real time for important events or changes affecting each customer*. When an important event occurs, Experian sends the bank a notification in order to take appropriate action (e.g. reducing the credit limit or engage to improve the customer relationship based on their situation and predicted evolution).

In addition to Credit Bureau Scores, Experian's batch customer analysis of internal data and our advanced affordability analytics based on internal transactional data and open banking data, Triggers act as health diagnostics on bank's portfolio and help improve the customer management and collections processes.

How to benefit from Experian Triggers

Experian maintains literally hundreds of different triggers that help banks know their customer situation in almost real time. Experian's triggers cover the four customer management points:

- Engage
- Maintain and grow
- Control existing credit risks
- Control new credit risks

These customer management points are handled through the use of a multitude of Experian triggers. Just a few examples of triggers are:

- New credit account trigger
- Credit account closed trigger
- Default account trigger
- Significant balance change (higher) trigger
- Individual reported as deceased trigger
- Change of current residential address trigger

* For more details, you can refer to the white paper "Knowing your customers With Credit Bureau Information and Scores", Experian, April 2015



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3 - Better interaction with your customers

The objective of the Early Warning System is to enable lenders to select appropriate management strategies, based on their customers risk' classes identified.

An appropriate classification ensures that communication is matched to the customer's situation so that any contact is relevant and supportive. As the customer has still not missed any payments with the organisation, it is key that an appropriate communication is adopted.

At the heart of a pre-delinquency strategy is the offer of financial advice and guidance to the customer. The provision of advice represents an opportunity for those customers under financial pressure to either take their own steps to 'self-cure' or alternatively to pro-actively engage with the lender to discuss how they might resolve their current, but as yet undisclosed, financial difficulties.

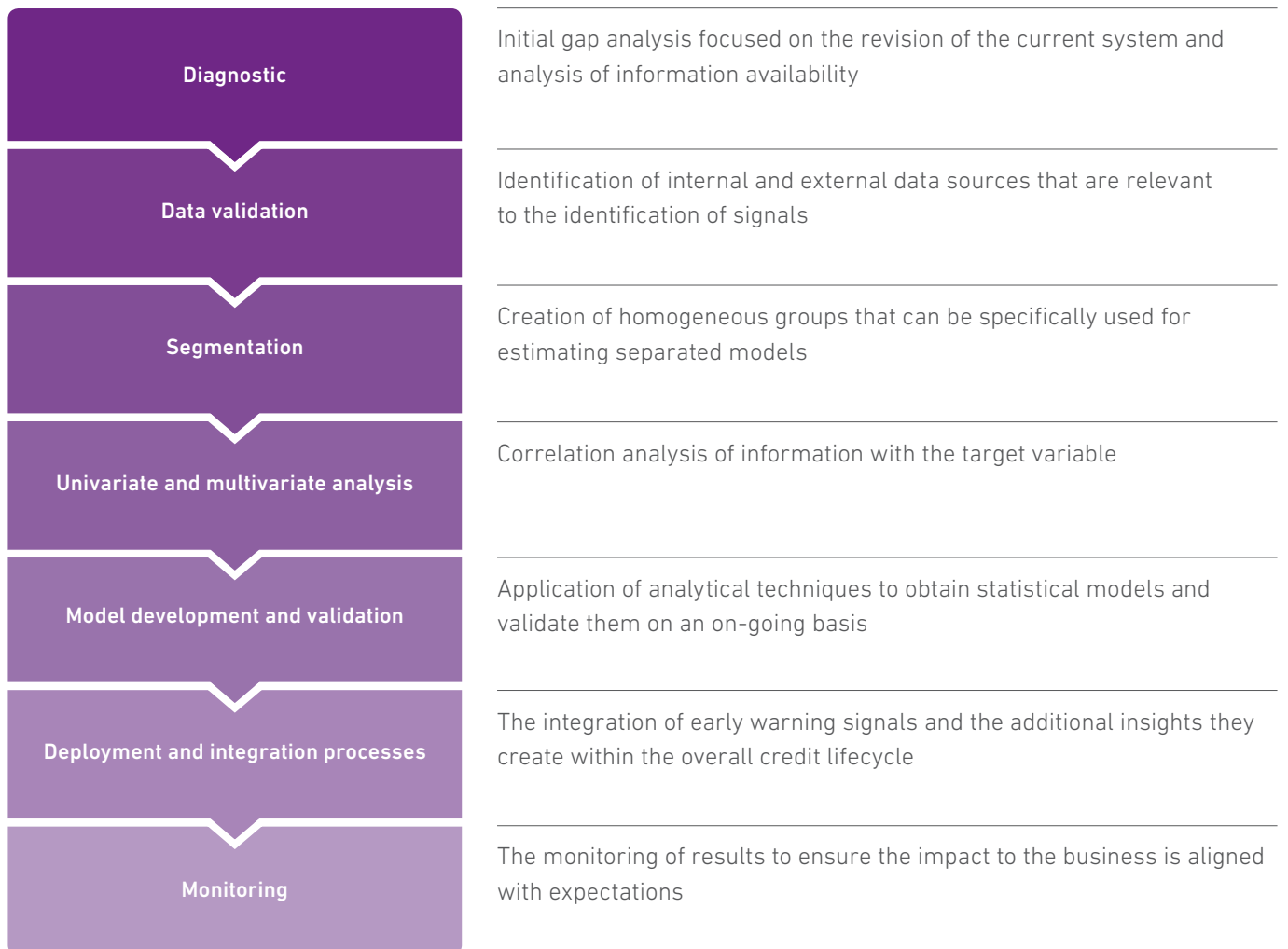
For illustration purposes only, the following example can be used to show segmentation of customers into distinct groups and the actions taken matched to the appropriate circumstances.

Risk Class	Signals	Actions	Objective
Low risk	<ul style="list-style-type: none"> Regular behavior 	<ul style="list-style-type: none"> Constant monitoring in order to identify promptly signs of deterioration 	<ul style="list-style-type: none"> Verify periodically the change of the accounts status
Medium risk	<ul style="list-style-type: none"> Serious and long-term anomalies but the profile is likely to improve 	<ul style="list-style-type: none"> Improve the risk profile through: <ul style="list-style-type: none"> - Request of new guarantees - Payments plan review - Review terms of new offers 	<ul style="list-style-type: none"> Higher recovery in pre-collection Reducing exposure
High risk	<ul style="list-style-type: none"> Deterioration of the risk profile 	<ul style="list-style-type: none"> Agree repayment and/or obligation to repayment plans Request of new guarantees Stricter risk policies in application 	<ul style="list-style-type: none"> Higher recovery in pre-collection Progressive and full recovery of the exposure



The Experian Early Warning System approach

The Experian approach uses an integrated method that involves market-proven expertise, best utilisation of data and advanced analytics, covering all elements of the process:



Early Warning System

Benefits of Experian's Early Warning System solution

The Experian's Early Warning System is an easy-to-implement solution that combines multiple data sources, advanced analytical models and a consultative approach to help lenders identify proactive actions using warning indicators in order to generate many benefits.

The benefits of adopting a pre-delinquency strategy is self-evident: if earlier intervention can prevent cases entering collection in the first place, the collection workload will be lower and bad debt write-offs will be reduced. In addition, it is an opportunity to build a strong relationships with customers or, if necessary, to deploy more effective collection actions, to protect revenue streams and to fulfil the requirements of a responsible lender.

In practice, achieving these benefits requires careful planning and the ability to access the right data, both internally and from the bureau, and to use them effectively to enable the accurate targeting of "at risk" customers.

Adopting a proactive and data and analytics-driven approach can be highly rewarding in terms of:

- Getting paid before the client becomes delinquent
- Increasing self-cure rate in early buckets
- Reducing flows of new non-performing loans into early collections and from early to late stage collections
- Improved customer experience through sensitive actions and communication
- Cost savings in collections (extra cost for an EWS is normally over-compensated by reduction of cost in early and mid-collections)
- Additional information for risk assessment in Originations and Customer Management: for example declining applications based on warning indicators or reducing limits; excluding likely higher-risk customers from up-selling and cross-sell campaigns
- Compliance with regulatory requirements on fair treatment and risk appetite framework

Our engagement model is flexible meaning that we can partner with clients in all stages of the process or, alternatively, provide support in one or more critical points.



We actively share our knowledge to ensure lenders have the skills required to become self-sufficient in the use of EWS solution to achieve their own business goals.

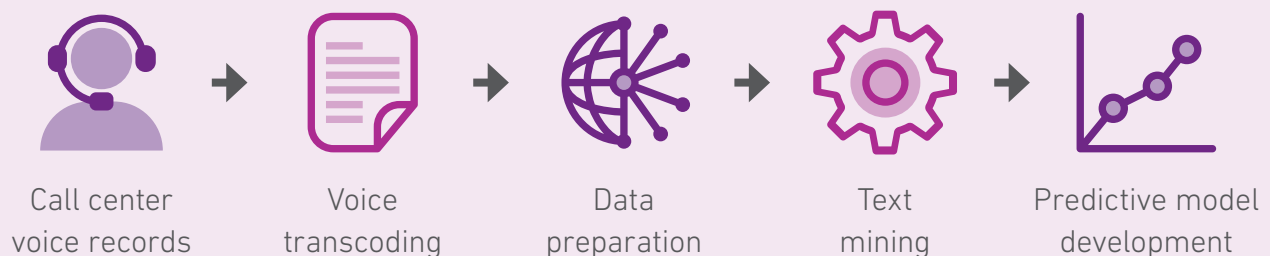
An innovative modelling approach for Early Warning System: Voice of the Customer Analytics

Subject to potential local legislative restrictions, an innovative solution that can be implemented to define pre-collections strategies, using the data obtained from the conversion of contact calls into text, associated with the application of text mining techniques.

By mining word and phrases and developing predictive models, the Voice of the Customer Analytics solution allows to identify the customers with the highest probability for paying their debts.

Using advanced statistical methodologies from text analytics to identify relevant information in automatic text classification, a deep dive into natural language processing is possible to gain more dynamic and accurate statistical models.

The following process shows how is possible to create predictive models from call center data:



Creating the model development database

The spoken words are converted to the most likely dictionary word and the text classification is combined with information about the customer, the payments and debts to create the customers database for the models development.

Text mining

Tords and phrases (N-grams* and other features) are created and risk levels are associated with each of them. The most predictive combination of words and phrases model are then fed back into each sample observation and such patterns in the voice data are analyzed for the predictive models.

Predictive model development

Word and phrase patterns are used to generate highly predictive feature vectors that are modelled with machine learning techniques. Many iterations of scores are evaluated for both statistical performance and business sense and the most performing is selected to be assigned to each observation.

Optimising customer care and preventive collections actions

The voice scores provide up-to-date, accurate insights which can be used in combination supplementing the risk view from traditional scores for optimising allocation of effort to cases, applying customer service oriented treatment to good customers and applying preventive collections actions for customers with high risk.

* Patterns of combinations of N words are created from observations of text that is mined



CASE STUDY

An International Banking Group implemented Early Warning System and strategies to reduce the number of cases to be treated in the recovery process and the overall collection costs.

Business challenge

The bank had robust systems and processes to manage customers who became delinquent in order to recover the outstanding debt and rehabilitate them but the relationship with their customers deteriorated and the organisation was incurring high collection costs.

The bank recognised that a proactive approach, taking action before a customer becomes delinquent, could have an impact on delinquency levels and improve the effectiveness of the collections activity and reduce the exposure of the bank.

How Experian helped

Through the portfolio segmentation and the development of specific forecasting models by product/

bucket (from 0 to 1), Experian helped enhance the usage of both the bank's internal data and Credit Bureau information and define relevant actions for each specific segment.

Benefits

The results included:

- Reduce flow rate into early stage collections by 25%
- The decrease of Cost to Collect by 20% in six months
- The reduction of number of delinquent accounts by 15%
- The optimization of Customer care process and Attrition level

CASE STUDY

An Italian Banking Group wanted to launch a pre-collection process based on the prediction of the probability to recover, in order to reduce the number of accounts to be allocated to external collection agencies and improve the quality of the exposures.

Business challenge

The lender recognised that taking a pre-delinquency approach to customers that were thought to be in distress would be beneficial (about 70% of the portfolio was also exposed to other financial institutions) and would enable the management of problematic cases prior to other lenders.

The aim was to establish control also improving customer experience and thereby gain payment commitment whilst the issues were still manageable.

How Experian helped

The first step was to build a decision tree that used a combination of internal and external bureau data

that could be applied to non-delinquent customers. The lender used then these segmentation to rank order the customers and assign specific pre-collection strategies.

Benefits

The results included:

- \$130m of outstanding amount move back to regular
- Decrease of Cost to Collect by 25% in 4 months
- Loss reduction of \$4 million on an annual basis
- Enhancement of Customer relationship and staff competences



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