Breaking Down Complex Loans: An Opportunity for Automation

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In recent years, banks' IT landscape for lending operations has changed significantly.

In this context, consumer loans have been in the centre of attention. Processes such as automatic legitimation or automatic parsing of uploaded documents that, up to now, required a personal visit either to a bank branch or to a third-party service provider, can now be fully automated and carried out online. Nowadays, it often only takes hours from capturing a consumer loan online, customised based on predefined product conditions in terms of loan volume, term, and repayment modalities, to crediting the outpayment to the borrower's account. This expansion of the technical infrastructure for consumer loans goes hand in hand with banks' withdrawal from the branch business.

Other rules apply, however, to corporate loans and project finance, often referred to as complex loans: Even today, they are often still applied for, signed, filed, and mostly also managed on paper. The degree of automation for both loan origination and loan management is low compared to retail business. As a reason for this, banks often cite the complexity of these loans.

A loan is always the transfer of capital to a borrower unit under certain conditions. So, why are corporate loans and project finance more complex – and what hinders their technical implementation? How can the complexity of these specific loan types be reduced without restricting the freedom to define contracts as desired?

In order to answer these questions, a detailed analysis of complex contracts is required. In mathematics, a complex term can be simplified by combining equal variables and taking into account a certain order when processing the term. Similarly, it is also possible to simplify the contract of a loan by sorting and combining its elements.

For a complex loan agreement, this means that the complexity can be reduced, in a first step, by assigning individual contractual provisions to the structural elements of the loan agreement.

These structural elements include:

- **Borrower unit**
- **Lending operation(s)**
- **Collateral**
- **Collateral provider**
- **Additional agreements**

However, the complexity usually does not only come from the use of all structural elements in a loan agreement, but also from the quantity and quality of the design parameters per structural element used in the loan agreement.

Here are a few examples and considerations for reducing complexity:

Borrower unit

In complex loans, borrower units usually consist of several parties. They can be legal and/or natural persons. The legal and economic interdependences of borrowers, especially regarding credit risk, also add complexity.

This complexity can be reduced by looking at the respective evaluation targets separately: For example, in addition to the company structure that shows the legal interdependences of the individual borrower units, their economic dependencies and beneficiaries should be evaluated in a separate step.

Lending operations

Depending on the structure of a loan agreement, on a technical level, it is advisable to subdivide the agreement into several lending operations. This applies in particular to payment tranches with individual conditions each. When processing the loan agreement, the sequence predefined in the payment plan of the individual technical lending operations is followed.

Another form of complexity may result from non-deterministic agreements that affect the payment plan. This applies, for example, to repayments or other conditions that are tied to events whose occurrence at the time of the conclusion of the contract is at best an expectation, but whose exact dates and impact are uncertain. The resulting complexity is essentially related to factors other than payments.

For example: The borrower unit makes a payment after the occurrence of an event ("20% repayment 6 months after project completion"). Here, it becomes obvious that the complexity rather arises from bank management requirements as well as internal and external reporting requirements. With respect to these requirements, an overview of the expected payments should be prepared, based on the most likely probability-weighted expectations regarding future payments for a lending operation.

In this case, too, the complexity can be reduced via a split evaluation of the payment plan: By preparing one overview that takes actual payments into account, and a separate overview based on forecast targets such as "Percentage of project progress" or "Consideration of expected payment behaviour (Exercising special repayment rights)" that contains the estimated/expected future repayment plan.

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Covenants

Covenants generally extend the data pool of a loan agreement beyond the data range required for processing the technical lending operations that make up the agreement.

In this case, complexity can be reduced by classifying the covenants. Covenants which are purely informational and do not necessarily affect loan processing must be distinguished from those which do have a direct effect (i.e., “financial covenants”).

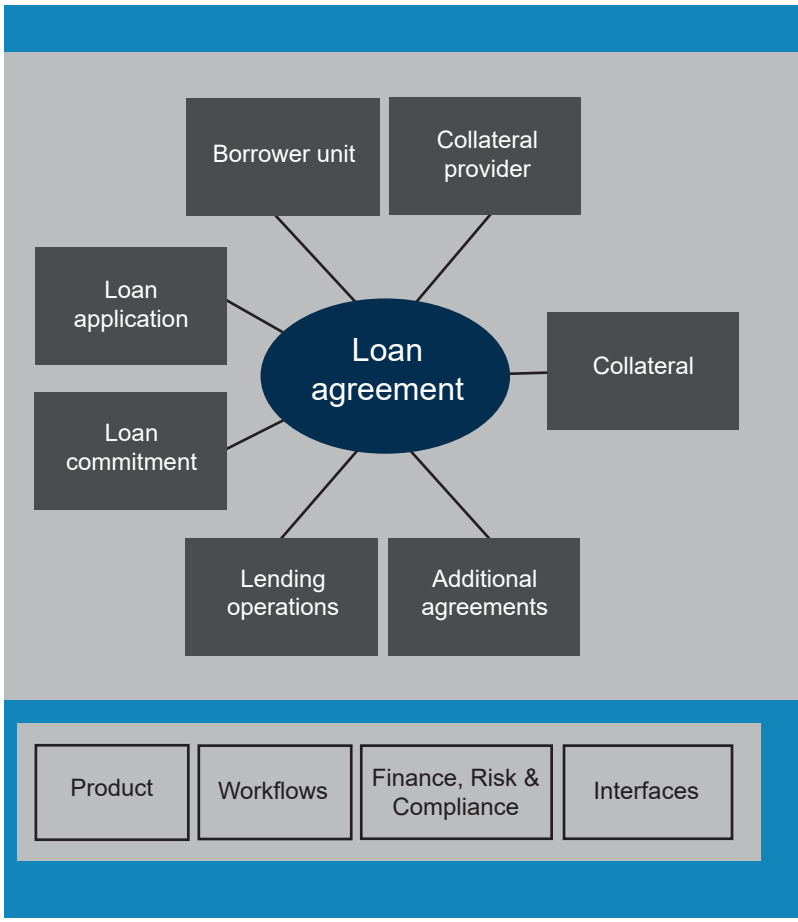
They can be organised by means of follow-ups or KPIs. Business transactions resulting from financial covenants can be triggered, if necessary. For informational covenants for instance, the collection of borrower data can be initiated.

By systematically breaking down complex loan agreements as described above, on a technical level, even a complex loan can be processed using standard tools for standard loans.

In a first step, a complex agreement is broken down into its structural elements. In the second step, the necessary functions for loan processing and the provision of information for bank management as well as internal/external reporting needs are identified for each structural element. As a result, on a more fine-granular level, mostly the same functions as for a standard loan can be used.

Any change to the borrower unit is carried out in the “borrower unit” structural element of the loan agreement. Thus, it automatically affects the technical loan agreements. In the context of loan quality, for example, it has an effect on risk provision. The same applies to changes to collateral, collateral providers, and financial covenants. The calculation of risk provisions, amortised cost or effective interest rates according to IFRS 9 can be based on the individual technical loan agreements, for example. However, an overall view of all technical lending operations within a loan agreement is required, if for example, the number of days past due for the loan agreement, or valuation variables such as “Total exposure with a borrower unit”, or “Significance of outstanding claims” are to be determined.

This approach eliminates the alleged lack of possibilities for a technical implementation of complex loan processing systems. Complex loans can largely be processed using standard tools for consumer loans.



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