Lending Databases
(Mortgage Loan Servicing and Loss Given Default Databases)

Document for RBA/NBR Endorsement

March 2008

Background

The SPI Committee approved on September 14, 2006 the undertaking of two the SPI Projects on Lending Databases: Mortgage Loan Servicing Database and Loss Given Default Database. The objective of the two projects is to "***prepare a set of recommendations on the consensus-building, practical and technical steps that the banking system will need to take in order to set up databases that address mortgage loan servicing/ loss given default information requirements".*** Given the commonalities in terms of purpose and informational and technological requirements, the SPI Committee decided to run the two database design and implementation modules together, in order to achieve the best learning and implementation synergies. Projects ToRs provide, in a first stage, the identification of a off-the-shelf solution, and in lack of this kind of solution, to approach a custom made solution, in a second stage.

Objective of the document

The present document presents the PWG recommendations with a view to enabling the Romanian Banking Association and the National Bank of Romania to take a strategic decision in implementing the databases through an existing Romanian institution. (based on the fact that PWG couldn't identify a "off the shelf" solution). The document is pointing out the benefits of setting up industry-wide lending mortgage loan servicing and loss given default databases, the international experience, the implementation main issues and steps. Details on above mentioned areas are provided in the annexes. This document marks the conclusion of the SPI projects.

Following RBA and NBR endorsement, the project will move to a detailed planning stage. The PWG expects a comprehensive technical document supporting an implementation decision to be completed by the end of November 2008.

Document prepared by the SPI Secretariat

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PROJECT WORKING GROUP COMPOSITION

Project Management Group
Project Owner (PO): **Mirela Bordea**, Vicepresident, Credit Europe Bank
Project Manager (PM): **Ovidiu Bordeut**, Director, Credit Europe Bank
Deputy Project Manager (DPM): **Beatrice Popescu**, Director, Alpha Bank
Deputy Technical Project Manager (DTPM): **Mirela Palade**, Deputy General Manager, TransFonD

Project Working Group
Angela Margarit, Expert, National Bank of Romania, Financial Stability Department
Tudor Boengiu, Inspector, National Bank of Romania, Supervision Department
Andrei Burciu, Manager, Portfolio Analysis Department, Consumer Risk, Raiffeisen Bank Romania
Daniel Sava, Risk Manager, Workout & Restructuring Department, Unicredit Tiriac Bank
Sorin Vlad, Senior Risk Manager, Credit Risk Control Department, Unicredit Tiriac Bank

SPI Project Technical Anchor
Italian Banking Association

PROJECT WORKING GROUP ACTIVITIES

Dec. 2006: Convergence appoints the project technical anchor (Italian Banking Association)
Dec. 19, 2006: Technical workshop on the "International Experience with Lending Databases", with the participation of the Italian Banking Association
Feb. 1, 2007: Project strategy meeting defining the project objective and the guiding principles, based on the technical anchor recommendations
Apr. 19, 2007: SPI Secretariat submits to the SPI Committee members from NBR and RBA and to the project owner the project status report and a "rescue" strategy for their endorsement and action;
May-June, 2007: Following the SPI Secretariat actions, three additional banks and the NBR Supervision Department have designated representatives in the PWG;
July 25, 2007: SPI Committee decides to revamp the project management team in order to strengthen the ownership and speed up project completion;
Aug.-Sept. 2007: SPI Secretariat follows up with RBA management on the project ownership. A concrete action plan for project implementation is sent for endorsement;
Sept.-Oct. 2007: SPI Secretariat finalizes a document for PWG discussions;
December 2007: The new PWG meets and gets acquainted with the project;
January 2008: SPI Secretariat prepares a new action plan;
February 2008: PWG meets with Credit Bureau and TransFonD representatives. TransFonD is appointed by SPI Committee in PWG. PWG details some data requirements and agrees on the next steps.

Project Working Group Recommendations

Recommendation no. 1: In order to better communicate the benefits of setting up the two databases, SPI Secretariat will aggregate the banks' responses to the attached Questionnaire.
Recommendation no. 2: Project Working Group (PWG) recommends that banking community and the National Bank of Romania join efforts in order to ensure consistency with the central bank requirements.
Recommendation no. 3: Banks should seek for other relevant experiences in their groups.
Recommendation no. 4: ABI model in LGD could be used as benchmark
Recommendation no. 5: As a first step, each bank/NBR should appoint a responsible for this project. The responsible person should support the core working group/consulting company and should mobilize internally the necessary expertise.
Recommendation no. 6: PWG recommends that the databases are located in an existing institution. This would address the concerns regarding time, efficiency and accountability.
Recommendation no.7: PWG recommends that TransFonD undertakes the databases management. This seems to be the most efficient solution as it does not require additional investment, but ensures a better future use of the existing facilities. Solutions for avoiding overlaps in reporting could be identified. Appointing TransFonD for further implementation of the project would address efficiency and accountability concerns.
Recommendation no. 8: PWG recommends that the governance of the databases follows the main principles listed in Annex 4.
Recommendation no. 9: PWG recommends that the implementation team uses the outline provided in Annex 4 in order to detail the data requirement, data organizing and reports to be delivered to users.
Recommendation no. 10: PWG recommends that the implementation team sets up an uniform set of definitions for data collection purposes.

Envisaged Implementation Timetable

Action	Deadline
RBA/NBR Endorsement	**End March 2008**
Implementation team appointment	**End April 2008**
Preparation of the feasibility study	**End October 2008**
Detailed Implementation Plan Ready	**End November 2008**
Databases Operational	**End December 2009**

Contents

1. The Benefits of Setting Up Industry-Wide Lending (Loss Given Default and Mortgage Loan Servicing) Databases

Setting up the databases has a critical importance for the financial sector as it will support banks in reducing their capital requirements under Basel II, it will improve the risk management and the pricing of certain categories of products and it will enhance the tools available to the central bank for monitoring financial stability.

1.1. Reducing capital requirements under Basel II

a) Mortgage Loan Servicing Database

Basel II Capital Accord provides that loans fully secured by mortgages on residential property (that is or will be occupied by the borrower, or that is rented), can be **risk weighted at 35% (instead of 50%),** and mortgages on office and/or multi-purpose commercial premises and/or multi-tenanted commercial premises may be applied a preferential **risk weight of 50% (instead of 100%),** based on the **default experience for these types of exposure**.

A database allowing the calculations of the default rates for these exposures would enable the application of this more favourable regime for loans secured by mortgages, decreasing thus **the capital requirements**.

b) Loss Given Default (LGD) Database

Under the Basel II foundation methodology, LGD is estimated through the application of standard supervisory rules (the starting point proposed by Basel II is a 45% LGD value for most unsecured transactions and a 75% LGD applied to subordinated exposures).

In the advanced methodology, the bank itself determines the appropriate LGD to be applied to each exposure, on the basis of robust data and analysis which can be validated both internally and by supervisors. Therefore, **a bank using internal LGD** estimates might be able to differentiate LGD values on the basis of a wider set of transaction characteristics (e.g., product type, wider range of collateral types) as well as borrower characteristics, potentially **being able to reduce its capital requirements.**

Details on NBR conditions for benefiting from more favourable capital requirements are presented in **Annex 1**.
According to the preliminary impact assessment performed by Convergence, in the first year of implementation of the two databases, **banks may benefit from equity relief of EUR 112 million and an increased lending volume of EUR 27 million.**

1.2. Improving the risk management of banks

The two industry-wide databases would also support banks in improving their individual risk management functions, as follows:

a) Mortgage loan servicing database

The mortgage loan servicing database would offer to banks a data pool that would complement internal information on: the value of real estate, the location of the real estate, the nature (residential or commercial) of the mortgage, the rank of the mortgage, the loan-to-value (LTV) information, default rates and recovery rates for mortgage loans, etc. helping thus banks to better assess the credit risk associated with the mortgage loans and also to price them accordingly.

b) Loss given default database

In addition to its Basel II related functions, LDG is also a useful tool in assessing the adequacy of provisioning in the day-to-day management of the credit risk. In this regard, many banks use parameterized methods (LGD-PD type) for the determination of loan loss provisions calculated under the IFRS framework. Moreover, LGD is an important parameter used in calibrating internal rating systems, which represents an important risk management tool. It is foreseeable that in the future more banks will start developing internal models that use LGD and PD estimates and that they will not have enough internal data on default and recovery to calculate reliable statistics. Also, the use of external sources (i.e., mother entities estimates) may not be appropriate for various reasons (i.e., different behavioural patterns of borrowers from various countries).

1.3. Improving the pricing techniques of banks

In addition to supporting the banks' risk management functions, average figures coming from data pooling initiatives could be useful for banks to improve the pricing of their portfolios during a securitisation of non-performing or other categories of loans.

1.4. Enhancing the tools for monitoring financial stability and banks' supervision

From the National Bank of Romania point of view, it would be also useful to have access to the two industry-wide databases for financial stability monitoring purposes. At present, the National Bank of Romania developed a model for corporate probability of default (PD), but the LGD was not yet approached.

NBR Supervision Department is interested in knowing the industry databases that are used by banks in their internal models as NBR will have to validate them.

Recommendation no. 1: In order to better understand the benefits of setting up the two databases, banks should fill in the attached Questionnaire. The SPI Secretariat will communicate the aggregate results.

Recommendation no. 2: Project Working Group recommends that banking community and the National Bank of Romania join efforts in order to ensure consistency with the central bank requirements.

2. International experience in setting up data consortiums

SPI Secretariat identified some examples of banks pooling individual data at national and international level, especially on the default and recovery area.

The **Italian Banking Association** (ABI) led industry-wide database initiatives on operational risk and on **LGD.** Although the LGD database initiative advanced well in terms of building consensus among banks and establishing database architecture, the project did not materialize because Bank of Italy decided to take it over and develop it as a compulsory reporting system for all banks. So far, the initiative is still pending under the auspices of Bank of Italy;

In 2000, the **British Bankers' Association** (BBA) created an **external loss event database** (GOLD) operated by an unincorporated not-for-profit consortium of financial services institutions. The database was set up starting from the principle that "pooling" external information provides participants with a depth of information that is much wider than the experience of their own institution.

To overcome the problems raised by the insufficiency of internal data on default and recovery for calculating reliable statistics, a group of **14 European Banks** (among which can be mentioned Barclays, BNP Paribas, JPMorgan, Royal Bank of Scotland, NIBC, etc.). The database was set up to meet both compliance (Basel II) and business objectives (to help them better prices their portfolios in securitization transactions).

Details on these experiences are available in **Annex 2**.

Recommendation no. 3: Banks should seek for other relevant experiences in their groups.

Recommendation no. 4: ABI model in LGD could be used as benchmark (document provided in attachment).

3. Main Issues in Implementing Industry-Wide Lending (Loss Given Default and Mortgage Loan Servicing) Databases

3.1. Stakeholders

The experience with this project showed that the complexity of setting up industry-wide lending databases requires a high stakeholder commitment, reflected not only at a declarative level, but also in the size and quality of the deployed resources.

The team involved in databases implementation should have comprehensive expertise, covering the credit risk management, IT, legal and financial areas. Experts involved in building up other inter-bank databases such as the Credit Bureau could be an important asset for the project.

Given the complexity and the novelty of the databases, the project team should have a core dedicated group of specialists or should rely on the services provided by a specialized company, in which case the Romanian Banking Association should be the contractor. The continuity of the people's involvement is important for efficiency and accountability reasons.

> *Recommendation no. 5: As a first step, each bank/NBR should appoint a responsible for this project. The responsible person should support the core working group/consulting company and should mobilize internally the necessary expertise.*

3.2. Institutional arrangements

A database generally involves the data providers and data users, the data manager and the governing body. **Annex 3** presents more details on their specific roles and responsibilities.

PWG considers that choosing the data manager is crucial at this stage of the project as it could solve the problem of the project leadership. The possible options are:

    i) RBA (following the Italian model) – which will imply the development of a specific structure to ensure the operating of the database;

    ii) Creating a specialized / dedicated ONG or commercial company set up for this purpose (following the English model);

    iii) Using an existing institution which already collects data and information from banks.

PWG analyzed the two main options for locating the inter-bank lending databases: a specially established institution or an already existing one.

Setting up a new institution

Pros	Cons
Specialized institution	Relative long time for establishing the institution
Specific governance	Overlapping with other institutions
	Important financial resources
	Higher implementation risks

Using an existing institution

Pros	Cons
Existing infrastructure	Not strictly specialized institution
Existing personnel	Need to adapt governance
Lower investment necessary/ Better use of the existing investment	Possible need to adapt internal procedures
Better accountability	
Lower implementation risks due to previous experience	
Shorter implementation period	

Recommendation no. 6: PWG recommends that the databases are located in an existing institution. This would address the concerns regarding time, efficiency and accountability.

PWG identified two existing institutions and explored with their representatives the opportunity and feasibility of placing the industry-wide lending database under their management: Credit Bureau and TransFonD. The pro and con arguments are presented below.

Credit Bureau eligibility

Pros	Cons
Existing lending database	Specialized product – credit report
Existing infrastructure	Need to develop existing infrastructure
Existing personnel	Need to increase existing personnel
Existing governance	Need to adapt governance
Existing internal procedures	Need to adapt internal procedures

TransFonD eligibility

Pros	Cons
Existing payment database	Need to reshape governance
Better use of the existing infrastructure	Overlaps with other databases (NBR's and Credit Bureau)
Databases stakeholders well represented in ownership (banks and NBR)	
Existing personnel	
Possibility of mobilizing own funds for the databases	

> *Recommendation no.7: PWG recommends that TransFonD undertakes the databases management. This seems to be the most efficient solution as it does not require additional investment, but ensures a better future use of the existing facilities. Solutions for avoiding overlaps in reporting could be identified. Appointing TransFonD for further implementation of the project would address the efficiency and accountability concerns.*

> *Recommendation no. 8: PWG recommends that the governance of the databases follows the main principles listed in Annex 4.*

3.3. Main items of the databases architecture

The databases should contain three types of data reported monthly by banks:
1. information on the banks' counterparts;
2. information on the securities (guarantees plus collateral);
3. information on exposures.

On the data requirements, PWG could only identify at this stage the large categories of data to be reported to the database:

 - Loss Given Default Database should contain historical data on:
   o The client (client identification);
   o The exposure (type, size, reimbursement schedule, etc);
   o The collateral (financial or physical collateral and for the later one the type of mortgage – residential or commercial real estate, collateral value and market value);
   o Recovery process (period, recovered value, indirect and direct collection costs);
   o Exposure to default by type of client, by economic sector and by type of product;
   o Discount factors.

- Mortgage Loan Database should contain, in addition, more data on the collateral referring to the real estate destination (for renting, if individual building or multi-office building, etc).

Based on the above mentioned data categories, banks should receive monthly the Loss Given Default rate by type of client, of product, by economic sector, by region and by type of collateral, in order to use them for scenarios elaborated with each bank's predictability items.

Annex 5 outlines a proposed approach for the LGD and MLS databases informational, methodological, and technical requirements.

Recommendation no. 9: PWG recommends that the implementation team uses the outline provided in Annex 4 in order to detail the data requirement, data organizing and reports to be delivered to users.

Recommendation no. 10: PWG recommends that the implementation team sets up an uniform set of definitions for data collection purposes.

NBR Conditions for Benefiting From More Favourable Capital Requirements

The implementation of the Basel II provisions as of January 2008 does not automatically warrant the application of more favourable capital requirements. In order to benefit from the Basel II more favourable provisions on calibrating the capital requirements, banks have to demonstrate compliance with specific provisions comprised in NBR/NSC Regulation no. 15/20/2006 regarding the treatment of credit risk for credit institutions and investment firms.

A. NBR conditions for recognizing data coming from industry data pools

In case that a credit institution uses centralized databases, coming from more credit institutions, it has to demonstrate the following:
a) the systems and the rating criteria used by the third credit institutions are similar to the ones used by the credit institution;
b) the centralized data are representative for the portfolio for which the data are used;
c) the centralized data are used by the credit institution in a consequent and coherent matter in time for obtaining its own estimations.

Also, a credit institution uses centralized data, coming from several credit institutions, will remain responsible for the integrity of its own rating systems.

B. NBR specific conditions for the two databases

a) Mortgage Loan Servicing Database

In order to apply the 35% risk weight to loans for residential purposes, the supervisory authorities should satisfy themselves, according to their national arrangements for the provision of housing finance, that this concessionary weight is applied restrictively:
  a) for residential purposes;
  b) in accordance with strict prudential criteria, and also
  c) based on the default experience for these types of exposure.

Also, the preferential risk weight of 50% to mortgages on office and/or multi-purpose commercial premises and/or multi-tenanted commercial premises may be applied:
  a) for the part of the loan that doesn't exceed the lower of 50% of the market value or 60% of the mortgage lending value of the property securing the loan;
  b) and under the fulfilment of two conditions have to be fulfilled:
  b.1. losses stemming from commercial real estate lending up to the lower of 50% of the market value or 60% of loan-to-value based on mortgage-lending-value must not exceed 0,3% of the outstanding loans in any given year;

b.2. overall losses stemming from commercial real estate lending must not exceed 0,5% in any given year.

The application of this more favorable regime for loans secured by mortgages would decrease the capital requirements and, most probably, also lending costs. In order to benefit of the New Accord on Capital provisions, the banking system should create and maintain an industry database that allows the calculation of the following ratios: default rate and recovery rates for loans secured by mortgages on residential real estate and, if endorsed by the National Bank of Romania, also on commercial real estate whose guarantee value is up to 50% of the market value respectively. The database should gather also information on the real estate market (market values of real estate properties).

b) Loss Given Default Database

Loss Given Default (LGD) is an important credit risk exposure data requirement under Basel II, indicating the magnitude of the likely loss on the exposure, given key transaction characteristics such as the presence of collateral and the degree of subordination. Banks willing to use their own estimates of LGD will need to demonstrate to supervisors that they can meet requirements pertaining to the integrity and reliability of these estimates.

In order to comply with these features of the Basel II framework, the banks should set up a database containing loan-specific data, including transaction and cash flow information that would enable users to more accurately quantify the unique characteristics of loan credit risk. The LGD database would also provide a rich repository of loss experiences as most banks will not have enough internal observations to draw meaningful conclusions.

Annex 2

The International Experience on Setting up Industry-Wide Databases

Italian Banking Association Databases

The Italian Banking Association (ABI) had a couple of industry-wide database initiatives.
The ABI database on Operational Risk (DIPO) was set up in 2003 in order to support banks in improving their operational risk management which is an important requirement under Basel II. The DIPO database objectives were to support banks in reducing the probability of a loss event, limiting the loss given event, and transferring the operational risk to third parties.

Another ABI database initiative referred to the setting up of an LGD industry-wide data pooling. Although the LGD database initiative advanced well in terms of building consensus among banks and establishing database architecture, the project did not materialize because Bank of Italy decided to take it over and develop it as a compulsory reporting system for all banks. So far, the initiative is still pending under the auspices of Bank of Italy.

Both databases (DIPO and LGD) were set up starting from the recognition of the fact that small banks had no clear idea on how to structure internal data collection and big banks had not sufficient internal data for an accurate assessment of operational risk. In practical terms, both databases were set up following these principles:
- raising awareness on the importance and role of the database about two years before starting the database set up;
- running open working groups which at certain point turned into smaller project groups;
- clear rights and duties of the consortium members: only those who send data receive outputs; respect of deadlines for submission; performance of data quality self assessment;
- small governance bodies, but open to all technical committees;
- flexibility of outputs;
- high standards of confidentiality;
- cost efficiency (low costs).

In terms of organizational structure, the DIPO database has the following characteristics:
- ABI is the only custodian of the DIPO's data;
- DIPO is governed by an Observatory which has clearly specified purposes (data collection, data analysis and return flows providing aimed at helping members to improve their estimates of operational losses and to perform comparative analysis);
- the governing bodies of the Observatory are the Steering Committee (composed of a limited number of representatives of member banks and of Bank of Italy representative as observer); the Technical Committees (whose areas of analysis and study are determined by the Steering Committee, and which are open to all members) and the Technical Secretariat (composed of ABI representatives). In addition, each

member bank must identify a DIPO coordinator whose duties include making sure that the minimum quality requirements for the observatory are maintained: accuracy, timeliness, and auditability.

British Bankers' Association Database

In 2000, a British Bankers' Association (BBA) initiative created an external loss event database (GOLD) operated by an unincorporated not-for-profit consortium of financial services institutions. The database was set up starting from the principle that "pooling" external information provides participants with a depth of information that is much wider than the experience of their own institution.

Loss events in GOLD were initially categorized according to the original Basel definition of those arising from "the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events". In 2005, event categories were converted, to be compliant with, though retaining greater granularity than, the definitions of loss event types, effects and business units arising from the qualitative impact studies conducted in Basel II.

GOLD is governed by a Management Committee selected from participating institutions and the BBA executive. Participation, subject to approval by the Management Committee, costs a joining fee of GBP1,500 and an annual subscription charge of GBP1,000 (n.b. all fees quoted are current levels and exclude UK Value Added Tax).

All funds are held collectively for the purchase of database custodian services from the BBA, legal costs or the development of the database. Applications to join the database are welcome from any financial institution, irrespective of its global location - membership of the BBA is not a pre-requisite for participation in GOLD.

Institutions supply quarterly loss event information to the BBA's Statistics Team, where it is validated for accuracy and consistency before being anonymized and consolidated into a report which is made available for nominated individuals within participating institutions. All information exchanges are conducted by the BBA within a secure website environment, ring-fenced from the general BBA information systems.

Box 1. Governance of British Bankers Association GOLD Database

- Participation in GOLD is approved by a Management Committee and subject to legal agreement.
- Participants provide data in accordance with timetables and processes specified by the BBA and commit to provide loss event data to the best of their institutional ability, dependant upon internal reporting capabilities. Participants should aspire to providing worldwide group information.
- BBA shall preserve the anonymity of individual participants' data.
- BBA shall maintain and develop the database solely for the purposes of the GOLD participants.
- Participants and the BBA are expected to use reasonable skill and care in compiling the data entries.
- BBA shall validate submitted information, but is not legally liable for the quality of the consolidated database.
- BBA has the right to retain a participants' data should participation be terminated.
- Consolidated information in the database received by participants is confidential and may be used only for their own internal operational risk management purposes.
- Joining fees and annual subscriptions are reviewed by the Management Committee annually and payable by participants within 30 days of being invoiced.
- Funds are held by the BBA on behalf of the GOLD participants, with payments authorised by the Management Committee.

International Data Consortiums (Pan-European Credit Data Consortium)

The database was set up in the context of a consortium of banks that would contribute data and an external third-party data management specialist. This approach allowed the banks to apply their credit expertise, and to be active in designing the data resources that they required for their business. The banks have been attracted in the consortium between end of 2003 and June 2005. The contract with the data management company was signed in June 2005. The criteria for choosing the company were previous experience in collecting loss data, a good reputation, and also the decision was for it to have a profit incentive.

The banks decided to collect LGD data from 1998 for eight asset classes: three regional – small and medium-sized enterprises, large corporate and real estate and five global – project finance, commodities, shipping, aircraft and banks. The observation data would be collected at four points in the lifecycle of each loan – at the date of origination, one year before default, at default, and at resolution. Other information gathered included the rating of the counterparty, the nature of the collateral and guarantees, the exposure at default (EAD) and the value of the collateral and the details of each recovery cash flow following default.

The data drawing from the LGD database will be used initially for benchmarking – checking that internal credit statistics are in line with the market. As the quality of data improves and more data becomes available, banks will start using the statistics for calibrating their loss given default and probability of default models.

The database architecture was also reviewed by a Validation Subgroup of the Accord Implementation Group of the Basel II Committee. The supervisory review showed that the inter-bank data pooling was an accurate, reliable and cost-effective way of creating empirical data sets required to help banks estimate Basel II risk components.

From a business perspective, the data pooling will support the participating banks in commoditizing their credit risk. It was acknowledged that the more banks will be able to decrease the information asymmetry between themselves and investors by giving them access to reliable credit statistics, whereby the investors are able to assess the risk they are taking, the more confident the latter will be about investing and the more willing they will be to pay a higher price.

Annex 3

Structure of the Industry-Wide Lending Databases

An industry-wide database structure would be in principle composed of the following elements:

Chart 1. The functional organization of the database
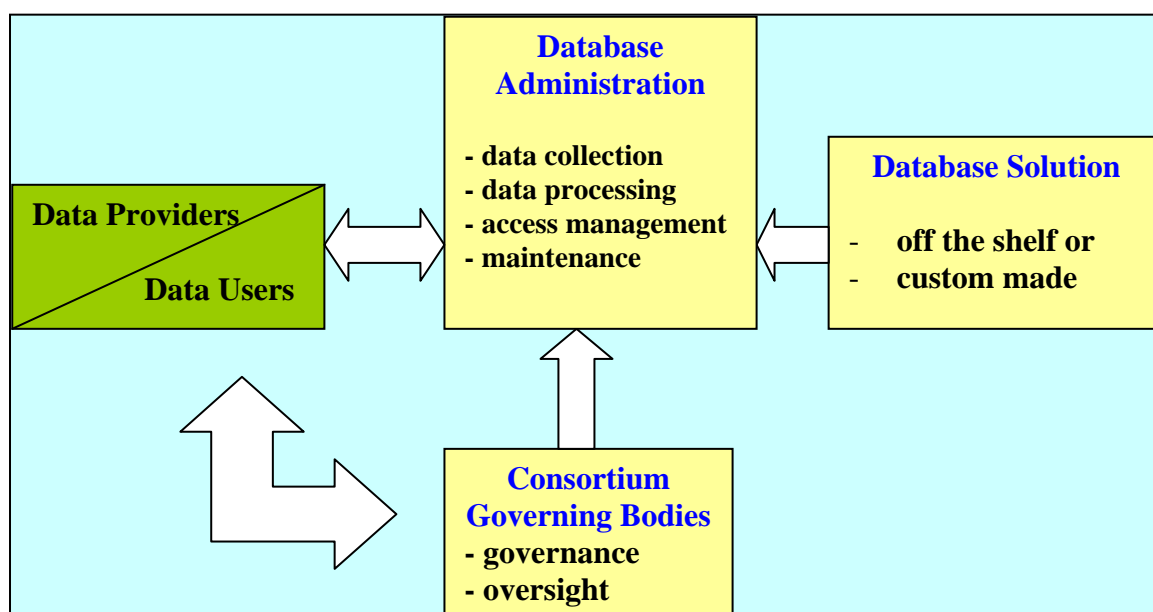
1. Data Providers / Users – the banks participating with their data and information to the database. Implicitly, the data providers will be also the users of the application and its outputs, based on the principle of reciprocity (users will receive only the types of data provided by them). In addition, it could be envisaged that NBR would also be one of the users with rights to be further determined and agreed by participants;

2. **Database Administrator** – which is the entity that will ensure the database management, by carrying out the following functions:
   o *data collection*;
   o *data processing*, including:
      ➢ participate in database and application development:
         • assist in requirements stage and data model creation;
         • play an active role in database design and creation;
      ➢ facilitate changes to database structure:
         • seek community-wide solutions;
         • assess impact on all users;
         • provide configuration control forum;
         • be prepared for problems after changes are made;

- maintain documentation;
  o *access management*, including:
    ➢ managing processing rights and responsibilities;
    ➢ developing database security;
  o *database maintenance*, including:
    ➢ controlling concurrent processing (ensuring that one user's work does not inappropriately influence another user's work);
    ➢ providing for database recovery;
    ➢ maintaining the data repository;
    ➢ providing or facilitating the provision of customer support.
3. **Consortium Governing Structure** – is represented by designated governing bodies which represent the interest of the stakeholders. The governing bodies will have the following attributions:
   o establish the database governance and operating principles;
   o ensure the oversight of the operating of the database and that the participating institutions' rights and obligations are followed;
   o decide on financial aspects related to membership and operating of the database.

The Main Principles for Setting Up Data Consortiums

A data pooling solution must draw on certain key requirements for collecting, normalizing and aggregating observation data coming from many different institutions:

- **Established standards –** the data collection must be based on established definitions, terminology, data models and methodologies agreed upon by all participating institutions;

- **Reliability -** the data pooling solution should be reliable, accurate, and cost-effective;

- **Relevance -** the database solution should allow access and control of substantial histories of relevant data. The pooling should be done uniformly, consistently across all member banks;

- **Confidentiality -** the solution should ensure the safeguarding of the confidentiality of each institution's data. Consolidated information in the database received by participants should be confidential and may be used only for their own internal operational risk management purposes. Mechanisms should also be established to render the data anonymous. Borrower identity should be protected by not including borrower names, and bank identities are to be protected by aggregating the data;

- **Security -** all information exchanges should be conducted within a secure website environment (or another technical solution), ring-fenced from other information systems;

- **Comparability -** the pooled data needs to be recent, of good quality, uniform and applicable;

- **Control -** based on their own needs, participating financial institutions should be able to determine issues such as the scope and scale of data collected, access rights and approval of new participating institutions. Providers of data pooling solutions should „work with banks and for banks": data templates, quality controls, the methodology, calculations and statistical analysis should be developed in consultation with industry leaders;

- **Checks on quality and quantity -** the consortium should designate an entity to interpret and implement the checks on quality and quantity, and to monitor and report on member banks' adherence to consortium standards and protocols;

- **Transparency -** the provider of the data pooling solution or the institution created for that purpose should deliver the data, statistics and research to clients/members with a

transparent approach. The data pooling agent must not work in a „black box", but publish definitions, calculations, and publish reports on its performance;

- **Proven technology** – the database solution should encompass automated data validation, submission and load tools ensure consistent data quality and provide complete audit trail;

- **Managed by banks** – the member banks should be involved in database project planning and logistics, member consultation, industry expertise and leading credit risk practitioners;

- **Reciprocity** - banks can choose which asset classes or other information they share data for, and from what period. In order to avoid the free rider problem, it would be advisable that banks will only receive back statistics for the classes and time periods to which they contributed data;

- **Membership standards** - a bank should not automatically qualify for membership if it applies. First, potential participants have to prove that they can meet the consortium's standards in terms of quantity and quality of data;

- **Data ownership** – it is recommended that banks own the data and have a considerable say in its use; the data pooling operator should not have unlimited use of the data;

- **Automation** - for greater efficiency, a more rational use of operational resources and more accurate data validation the data pooling solution requires technology systems to automate the data management process. As a manual process would be arduous, the data pooling system should use an automated application interface. Online access to the data bank considerably reduces costs associated with implementation, technical support, updates and physical distribution;

- **Logistics coordination** – given the high complexity of data pooling initiatives, it is important to set up proper organizational structures to deal with communications, organization and coordination;

- **Authorities participation and validation** – considering that one of the main goals of the industry-wide databases would be to help banks in better calibrating the capital requirement, the involvement of the supervisory authority in the database methodology would be useful for ensuring subsequent validation.

Proposed Outline of the LGD and MLS Databases Informational, Methodological and Technical Requirements

A. LGD Database

The present sub-section outlines the main points of the paper attached to this document and sent by the SPI project technical anchor (Italian Banking Association) on the Italian experience with setting up the loss given default (LGD) database. The following considerations represent a useful reference for the local stakeholders in designing a LGD database according to banking industry needs and in line with regulatory requirements.

I. LGD Database General Approach

The LGD database approach should take into account **a dual perspectiv**e:
- **Regulatory**, with the objective of identifying models that are consistent with the new regulations of the Basel Committee, therefore making them suitable for use in the Advanced Internal Ratings Based Approach –AIRB;
- **Managerial**, with the objective of providing valid reference frameworks that can also be applied, albeit in a simplified version, by those banks which, out of necessity or choice, will not adopt, at least initially, an Advanced Internal Ratings Based Approach.

II. LGD Database Methodological Considerations

The following approaches are possible for calculating the LGD:
- **Deterministic approach**, which has the advantage of simplicity, but it is not free of problems regarding the approximate nature of the results produced;
- **Stochastic approach not correlated with the PD**, which explains the variability if the observed recovery rate as much as possible;
- **Stochastic approach correlated with the PD**, which assumes that there is a correlation between the recovery rates and the credit rating of the client.

The approached embraced by ABI, which is useful for both regulatory and management purposes, is based on the deterministic approach (since the stochastic approaches require massive resources in terms of quantity and quality).

In the event of a debtor default, the amount actually recovered by the bank depends on a number of different factors:

1) **The presence of securities, collateral or guarantee**;

2) **The elapsed time between the onset of the default condition and the partial or total recovery of the amount leant** entails a financial cost that depends on the level of market rates;

3) Bankruptcy procedures and/or a bank's internal credit-recovery procedures entail costs that contribute to reducing the effective recovery of the credit.

III. LGD Informational Requirements and a Possible Database Architecture

The database presented is articulated in three archives that are differentiated in logical terms:

1. The first archive contains all the information on the counterpart that would be useful to repeat on every exposure referring to that same client. The indications include the status of the counterpart kind of default (both in terms of non accrued status/bad loans and from the Basel perspective). The key, therefore, is given by the identifier of the counterpart, linked with the ABI code, in the case of a centralized database (DB) centralized at the group level or in cases of data pooling.

2. The second archive contains the information on the securities (guarantees + collateral) collected and on the related recovery flows generated. Given that the guarantees can be either specific or generic, there must be a link both with the identifier of the counterpart (always filled in) as well as the guaranteed exposure (missing in the case of the blanket guarantee).

3. The third archive holds the data on the exposures, indicating the respective types, the detailed accounting positions and any actions undertaken towards recovery.

A monthly refresher of the three archives was planned, to be carried out under the following procedures:

- for the first archive (registry), a monthly record of data is collected for each counterpart;

- for the second archive (securities), a monthly record of data is collected for each security;

- for the third archive (exposures), a monthly record of data is collected for each type of exposure.

The structure has been selected on account of its high level of generality, which makes it possible to estimate both parameters necessary for the *IRB Advanced* approach and others used for purposes more closely tied to operations.

The creation of a data-pooling mechanism on a national level also involves selecting from among the fields belonging to the data structure proposed on the company level those which:

• represent minimum information to estimate LGDs (in other words, to minimize the burden of reporting for the participants);

• are characterized by the maximum possible precision and objectivity, prerequisites that are indispensable for the construction of a shared database containing qualitatively optimal data.

B. Mortgage Loan Servicing Database

I. MLS Database General Approach

The MLS database approach should take into account **a dual perspectiv**e:
- **Regulatory**, with the objective of identifying models that are consistent with the new regulations of Basel II;
- **Managerial**, with the objective of providing valid reference frameworks that can also be applied by banks in exercising their risk management functions.

II. MLS Database Methodological Considerations

The MLS approach for collecting and compiling information on default rates and recovery rates for mortgage loans could be very similar to the one proposed for the LGD database.

Therefore, the approach for calculating the LGD could be a deterministic one, which is useful for both regulatory and management purposes (since the stochastic approaches require massive resources in terms of quantity and quality).

The same principles can be applied to the MLS database in respect to the factors that influence the amount recovered by a bank in the event of a debtor default:

1) The value of the mortgage;

2) The elapsed time between the onset of the default condition and the partial or total recovery of the amount leant entails a financial cost that depends on the level of market rates;

3) Bankruptcy procedures and/or a bank's internal credit-recovery procedures entail costs that contribute to reducing the effective recovery of the credit.

III. MLS Informational Requirements and a Possible Database Architecture

The MLS database structure could be developed starting the proposed for the LGD database:

1. The first archive contains all the information on the counterpart that would be useful to repeat on every exposure referring to that same client. The indications include the status of the counterpart kind of default (both in terms of non accrued status/bad loans and from the Basel perspective). The key, therefore, is given by the identifier of the counterpart, linked with the database code, in the case of a centralized database (DB) centralized at the group level or in cases of data pooling.

2. The second archive contains the information on the mortgage collected and on the related recovery flows generated. The archive should include information of the market value of the mortgage, the rank of the mortgage, the location of the mortgage, the nature of the mortgage (commercial / real estate).

3. The third archive holds the data on the exposures, indicating the respective types, the loan-to-value information, the detailed accounting positions and any actions undertaken towards recovery.

A monthly refresher of the three archives was planned, to be carried out under the following procedures:

- for the first archive (registry), a monthly record of data is collected for each counterpart;

- for the second archive (securities), a monthly record of data is collected for each security;

- for the third archive (exposures), a monthly record of data is collected for each type of exposure.