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# Main characteristics and purposes of risk management related to inter-banking data collection initiatives

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# Agenda

• Who

• When

• Why

• How

- **General principle followed**
- **Focus on LGD data structure**
- **Lessons learnt and some idea for a working plan**
- **Questions time**

# Two Interbanking Data Pooling Initiatives in the fields of Operational Risk and Loss Given Default

## • Who

- ABI's interbanking working groups (WG) on OR and Credit Risk with both having Banca d'Italia representatives as observers
- OR WG was originated by a previous WG on Internal Control System and Internal Auditing
- LGD was a sub-group of a WG that had already issued a "White paper on PD"

## • When

- Around 2001 (the idea and the identification of a common data structure described in two different "White Papers")
- OR 1.1.2003 first day of DC for the DIPO DC
- LGD DP Never started. We stopped at DC

# Two Data Pooling Initiatives in the fields of Operational Risk and Loss Given Default

## • Why

- Smaller banks: no clear idea of how structure internal data collection
- Bigger banks: awareness of no sufficient internal data for both OR and LGD (no PD)
- Regulators: support to external data sources that will be easier to validate in the future
- ABI: starting from data ...perform both studies of the organizational solutions and methodologies for measurement and management of OR and estimation of LGD

## • How

- Creating awareness through articles and seminars starting 1-2 years before
- Running “open” working groups which at a certain point turned into smaller project
- Clear rights and duties of the consortium members
  - only who sends data receives outputs
  - respect of the dead lines
  - data quality self assessment
  - small governance bodies but “open to all” technical committees
- Flexibility of the outputs
- High standards of confidentiality (Abi reputation + encrypted data flows)
- Low costs

### Dipo

- 6 months (frequency of data flows) and small amount of data
- 1 assistant, 1 junior full time, 1 senior 30%= Secretariat
- IT support 1 senior and 1 junior (not full time)
- Interbanking IT data sharing structure=dedicated web pages on [www.abi.it](http://www.abi.it)
- More than 10 calls (loss data collection process+IT) for each member in each semester
- 60 kind of special events assessed by the Criterion Committee (time consuming)
- No reference in terms of data model, kind of statistical analysis, benchmarks (only QIS)

### LGD

- Monthly data flows
- Larger amount of data
- Interbanking IT data sharing structure??
- Team??
- Some reference in terms of data model, kind of statistical analysis, you can check your results against benchmarks (national and international LGD statistics)

# What the Italian interbanking WG means by Operational Risk Management (ORM)

Give a general vision

## Set of activities for:

- identification
- evaluation/quantification
- monitoring

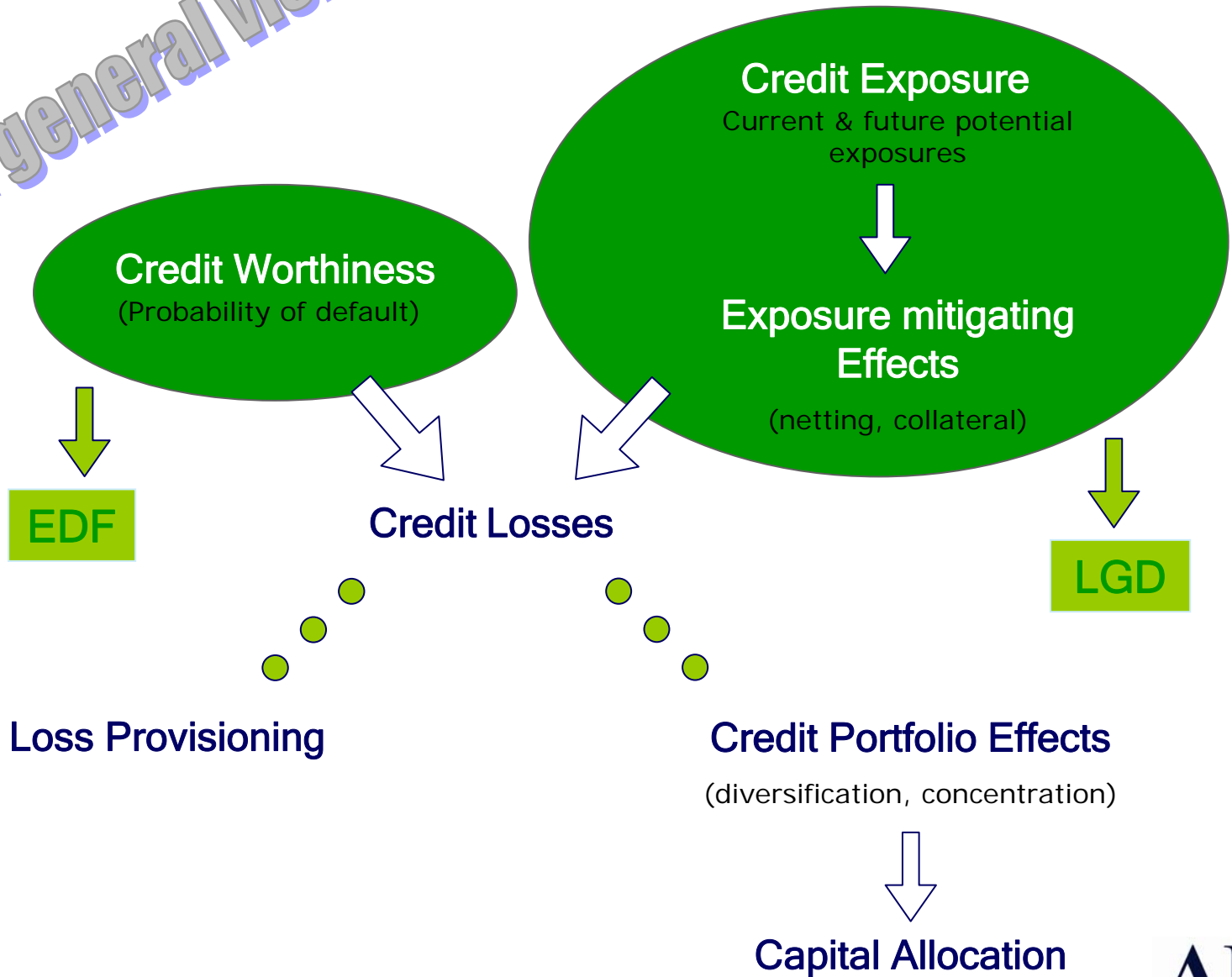
with the ultimate aim of mitigating OR consistent  
with the bank's risk appetite

## In term of strategies, ORM means optimizing investment in:

- reducing the probability of a loss event (PE)
- limiting loss given event (LGE)
- transferring **risk to third parties**

Give a general vision

# What the italian interbanking WG means by Credit Risk Management



## Why measure Operational Risk

Identify together all potential uses  
of data collected both internally  
and at the consortium level

The main reason put forward is the  
**correct capital allocation to all types of risk** (C,M,O).

Some additional reasons:

- **provisioning and pricing** policies (estimates of expected losses)
- optimization of **risk mitigation and risk transfer**
- impact on **Internal Control System**
- utilization of methods which, other things being equal, tend to reduce **supervisory capital requirements**

but above all

- **INCREASE RISK AWARENESS**






Stress data pooling benefits

Why are **interbank** initiatives important?

- Because you cannot assume null exposure simply because there are no loss events
- Because **time series of losses** of a single bank, e.g. data regarding a single BL or an ET, might **not be deep enough**
- **External data** are useful for **any kind of OR internal models** (non only “classical LDA approaches” but also scenario analysis, EVT, ecc.).
- **External data** are one of the 4 elements required for **AMA**.
- DIPO, as an interbank initiatives offers a **methodological frame of reference to launch/support the collection of data**



Why are **interbank** initiatives important?

- 
- Because what Banca d'Italia might give us will never be at the **granularity level Banks need for their internal LGD estimation (given that internal data are not sufficient)**
  - Banca d'Italia initiative is compulsory and this increases the representativity of that data but ..... It will impossible for them to ask to all banks, even no IRB banks, some very important information that are needed when it comes to the estimation of LGD cells defined by the single bank
  - Average figures coming from data pooling initiatives could be useful for banks to “better sell” their portfolios during a securitisation of non performing loans

Members, may 2005 now plus 4

Not only  
for capital requirement purposes

BANCA AGRICOLA POPOLARE DEL SUD RAGUSA
BANCA ANTONIANI E S. GIUSEPPE VENETA
BANCA CARIGE
BANCA CREDITO ITALIANO
BANCA CREDITO MONTE
BANCA CREDITO E MARCHE
BANCA DI CREDITO COOPERATIVO DI ROMA
BANCA DI PIACENZA
BANCA INTESA
BANCA LOMBARDA E PIEMONTESE
BANCA MONTE DEI PASCHI DI SIENA
BANCA NAZIONALE DEL LAVORO
BANCA POPOLARE DELL'ALTO ADIGE
BANCA POPOLARE DELL'EMILIA ROMAGNA
BANCA POPOLARE DELL'ETRURIA E DEL LAZIO
BANCA POPOLARE DI BARI
BANCA POPOLARE DI MILANO
BANCA POPOLARE DI PUGLIA E BASILICATA
BANCA POPOLARE DI VICENZA
BANCA POPOLARE ITALIANA
BANCA POPOLARE PUGLIESE
BANCA SELLA
BANCHE POPOLARI UNITE
BANCO POPOLARE DI VERONA E NOVARA
CAPITALIA
CASSA DI RISPARMIO DI RAVENNA
CASSA LOMBARDA
CREDITO EMILIANO HOLDING
CREDITO VALTELLINESE
SANPAOLO IMI
TERCAS
UNICREDITO ITALIANO



Some are also members  
of ORX or Gold



There is no  
minimum size



Not only  
AMA members



Behind these 32  
members there are about  
180 entities sending data

- ✓ **ABI is the only custodian of DIPO's data**
- ✓ **ABI's members are used to sending confidential data to the Association**
- ✓ **Strong commitment of both major groups and middle sized banks**
- ✓ **“Moral suasion” by regulators**
- ✓ **DIPO Technical Committees are considered as “educational/updating” opportunities**
- ✓ **Output flexibility (suitable for a wide range of applications)**
- ✓ **Scaling solution flexibility**
- ✓ **Low costs (budget for 2006 about 200.000 Euro)**

The Observatory is governed by its **Articles of Agreement**. Membership is formalized by signature of the Articles.

One of the annexes of the Articles of Agreement is the **DIPO Handbook** which details the activities involved in the collection, processing, and distribution to members of the data gathered through the Observatory.

## Purposes of the Observatory (from the Articles of Agreement)

Through the Observatory the members intend:

- to **collect data** on operational **losses** sustained by the members and on **some other variables** that are characteristic of the intermediaries and their business lines
- to analyze the data in order to provide **return flows** enabling members to:
  - **improve** their **estimates** of operational losses **at bank and group level**
  - to perform **comparative analysis**
- to perform **studies** of the organizational solutions and methodologies for measurement and management of Operational Risk

## **Organization of the Observatory**

The organs of the Observatory for the management of the DIPO are:

**Steering Committee** (composed of a limited number of representatives of member banks) *By invitation Banca d'Italia takes part as an observer*

**Technical Committees** (whose areas of analysis and study are determined by the Steering Committee, and which are open to all members)

**Technical Secretariat** (composed of representatives of ABI)

In addition, each member must identify a **DIPO co-ordinator** whose duties include making sure that the minimum quality requirements for the observatory are maintained: **accuracy, timeliness and auditability**

## *The member.*

- following the rules established in the DIPO Manual, undertakes to **report and update** the data on losses, Exposure Indicators (EI) and Business Lines (BLs) in which it engages and which are subject to reporting under the DIPO Manual
- **must develop a formal process for collection of data** within six months of signing the Articles
- pledges to take all actions necessary to ensure the quality, completeness and timeliness of the data on operational losses (**quality certification**)
- when requested by ABI, undertakes to carefully check its data and respond as quickly as possible to requests from ABI for verification of anomalies





Clear  
definition of the collection domain

The term “effective loss” means **negative income flows**:

- of **at least 5,000 Euro**
- with **certainty** of quantification of the amount in that it is entered in the **P/L statement** (including specific provisions, excluding generic loss provisions)
- **attributable to the event**, either directly or through management or departmental observation. Direct attribution applies both to losses and to any expenses - invoiced by third parties - sustained for settlement of the event
- **not due to** .....
- **net of .....** but **gross of amounts recovered**

**Better late  
and official  
than  
immediate  
but  
estimated**

PEL=Effective gross loss



Clear  
definition of the collection domain

The following information must be extracted:

- Single borrower (SB) in default at both the beginning and the end of the month of reference D - D
- SB that entered default during the month of reference B - D
- SB that returned to in bonis status during the month of reference D - B
- SB whose default was settled during the month of reference
- SB that entered and left a default position during the month of reference ....D – B....

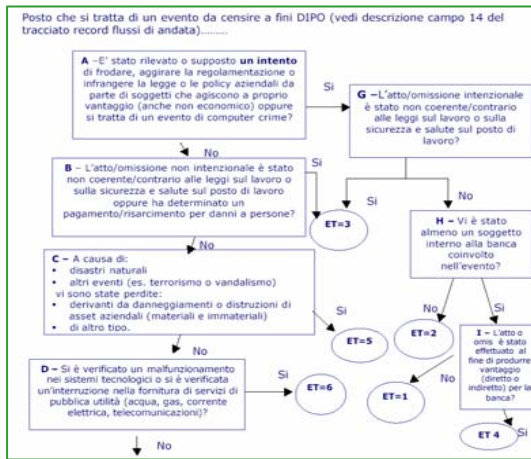
Status of the counterpart at the end of the month. Accepted variables:
0 – Bonis
1 – Payment non accrued
2 – Bad loan
3 – Other default positions
4 – Settled/discharged

# Build tools for uniform classification of data

Tools for uniform classification of events in DIPO

## Decision tree for ET (first level and second level)

## Schema for BL Mapping (June 2005)

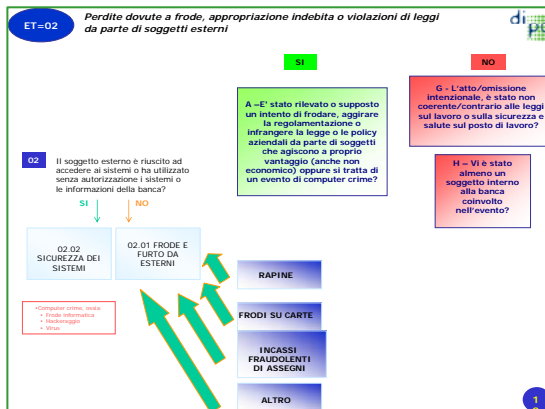


A sub-group of DIPO members has worked together with the Italian regulator to improve the BL mapping issued by the Basel Committee.

Each BL is described in terms of a list of typical European banks' activities

CEBS has substantially approved this solution in June 2005

Example



# Tools for uniform classification of events for LGD

8	Type of contract. Identifies the type of exposure. Possible variables:	
	CAS = Until revocation	
	RAL = Self-liquidating risk	
	FIC = Commercial signature	
	FIF = Financial signature	
	MUR = Residential mortgage loan	
	MUC = Commercial mortgage loan	
	CRF = Finalised loan <b>(1c)</b>	
	CRP = Personal loan <b>(2c)</b>	
	CCR = Revolving credit card	
	CCR = Credit card with payment in full	
	LSG = Leasing	
	FPC = promiscuous loan (cash)	
	FPF = promiscuous loan (cash + signature)	
	AML = Other M/L term financing	
	ABT = Other short-term financing	
	FEX = Forex	
	ABS = Asset Backed Securities	
	CLN = Credit Linked Notes	
	OTC = Over the counter derivatives	
	FCT = Factoring	
	SOF = Bad loans	To be used in cases where there is 1) unambiguous link between the lending structure at the moment of the default and the recovery flows 2) the link is lost. The second eventuality should be rare in cases of "light" default (i.e. past due).
	NDI = Not available	<b>NOTE:</b> In the case of data pooling, the reporting bank may not report more than x% of records classified NDI.

**(1c)** The term **finalised loan** refers to:  
 "Consumer financing for the purchase of a given good or service sold by a third party, known as the affiliate or dealer: the sum financed is paid, at the instructions of the borrower, directly to the seller of the goods or services covered by the financing", from "Consumer Credit 2001: Mercato, strategie e prospettive di sviluppo – *Il mercato del credito al consumo in Italia*" ("Consumer Credit 2001: Market, strategies and prospects for future development - *The consumer credit market in Italy*"), ABI-ASSOFIN.

**(2c)** The term **personal loan** refers to:  
 "Financing to the consumer, who is required to pay back the loan in instalments (generally monthly), together with interest. The payment of the financing consists of presentation of the sum directly to the borrower for a pre-set period of time, without any restriction on how it is spent, unlike the finalised loan", from "Consumer Credit 2001: Mercato, strategie e prospettive di sviluppo – *Il mercato del credito al consumo in Italia*" ("Consumer Credit 2001: Market, strategies and prospects for future development - *The consumer credit market in Italy*"), ABI-ASSOFIN.

Build tools for  
uniform classification of data

# Tools for uniform classification of events for LGD

15	Type of recovery action	Given the possibility of more than one action being undertaken at the same time, the introduction of a criterion designed to identify the predominant action (for example, in the case of combined court and out-of-court actions, the court action prevails).
	<i>15.a UNDERWAY</i>	
	1 = executive procedures chattel	
	2 = executive procedures real estate	
	3 = executive procedures delegated to notaries as per Law no. 302/98	
	4 = arrangements with creditors	
	5 = bankruptcy	
	6 = filed a bankruptcy	
	7 = court-ordered stewardship	
	8 = private agreements	
	9 = private agreements following visits to domicile	
	10 = other types of private agreements	
	11 = awaiting transfer	
	14 = other (third-party agreement)	
	15 = no action	
	<i>15.b BEING CLOSED</i>	
	1 = executive procedures chattels	
	2 = executive procedures real estate	
	3 = executive procedures delegated to notaries as per Law no. 302/98	
	4 = arrangements with creditors	
	5 = bankruptcy	
	6 = court-ordered stewardship	
	7 = individual transfer	
	8 = transfer in bloc	
	9 = other	
	10 = return to in bonis status	
	11 = balance and portion	
	12 = full loss	
	13 = conversion into capital (equity)	

Build tools for  
uniform classification of data

# Tools for uniform classification of events for LGD

## Types of guarantees:

**B1** = Guarantee

**B2** = Financial collateral

**B3** = Non-financial collateral

**B4** = Other forms of credit enhancement

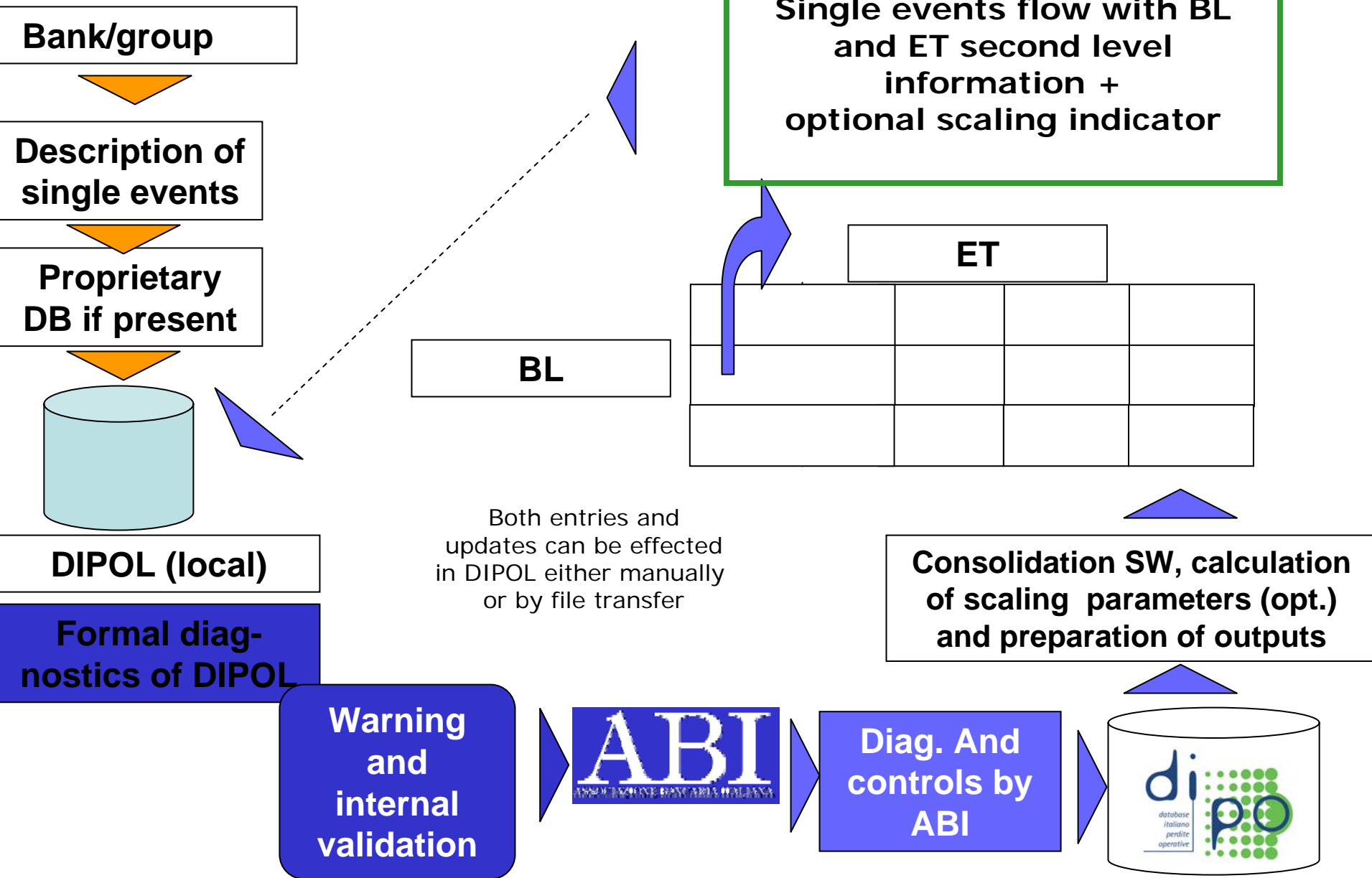
**T** = All



Year of construction of the building	B3
Commercial surface area (in square metres)	B3
Series of fields identifying the building	B3
Court with jurisdiction over registration of security	B3
Court with jurisdiction over recovery procedures	T
First/second/third mortgage	B3
Date of mortgage registration (YYYY/MM/DD)	B3
Value of mortgage registration	B3
Sum of the registration values of upper-level mortgages	B3
Date of first assessment (YYYY/MM/DD)	B3
Value of first assessment	B3
Date of last assessment (YYYY/MM/DD)	B3
Value of last assessment	B3

*Build tools for  
uniform classification of data*

# General principles for the governance of data flows



# What could be important for Romanian Banking Association

- Give all members the same software in which both formal and logical controls should be embedded
- This can be obtained by a web-based application or by client server applications (as DIPO, still now)
- The transfer of encrypted data flows between custodian and banks should take place on a protected web site.
- The main database should be under the Association responsibility
- Give all members the possibility to use manual or automatic data feeding
- Give to all members access to each section with no respect to the section to which they have contributed
- Give access to data only to members..... Do not sell the data!!!!!!





# Software DIPOL

The screenshot shows the DIPOL V1.1 software interface. The title bar at the top reads "DIPOL V1.1". On the left, the "ABI" logo is displayed above a vertical stack of six small images. The main menu items are: "Gestione Dati", "Gestione Flussi", "Impostazioni", "Storico", "Report", and "Crittografia". To the right, the "dipo" logo is shown with the text "database italiano perdite operative" below it. A green callout box points to "Gestione Dati" with the text "Data Management". Another callout points to "Gestione Flussi" with "Flows Management". A third callout points to "Impostazioni" with "General Settings". A fourth callout points to "Storico" with "Allows views and extractions of all the in/out flows". A fifth callout points to "Report" with "Basic reporting tool that acts only on Member's own data". At the bottom right, there is an "Esci" button and a small image. The "EDS" logo is in the bottom right corner.

DIPOL V1.1

ABI

Gestione Dati

Gestione Flussi

Impostazioni

Storico

Report

Crittografia

Esci

dipo  
database  
italiano  
perdite  
operative

EDS

Data Management

Flows Management

General Settings

Allows views and extractions of all the in/out flows

Basic reporting tool that acts only on Member's own data

# Manual Feeding

# Yellow and white fields

Data of loss occurrence  
Date in which the banks discovered the loss

BL and ET

PEL= Effective gross loss

Status = Open/Closed

ABI Caricamento manuale Eventi

GEDA3200

Entità Segnalante: 09999 - BANCA X

Data accadimento\*:  Data rilevazione\*: 02/03/2004

Business Line: 7 - Asset Management Tipo Evento: ... 03.02

Area territoriale: Sicilia Tipo Record: I

Qta manifestazioni: 1 Stato Evento: Aperto

Canale: T - Tradizionale Prg.: 184

Perdite

Totale PEL: 99999999

Accantonamento: NO

Perdite Stimate:

Recuperi

Recuperi Intragruppo:

Altri recuperi:

Assicurazioni

Copertura Assicurativa: NO

Recuperi Assicurativi:

Data Ultimo Recupero\*:

Evento Multientità

Evento Guida:

Inserisci Evento Multientità

\* Formato: gg/mm/aaaa

Conferma Esci

**DIPOL V1.1** **Caricamento Manuale Eventi**

GEDA3200

**Entità Segnalante:** 09999 - BANCA X

**Data accadimento\*:**  **Data rilevazione\*:** 02/03/2004

**Business Line:** 7 - Asset Management **Tipo Evento:** ... 03.02

**Area territoriale:** Sicilia **Tipo Record:** I

**Qta manifestazioni:** 1 **Stato Evento:** Aperto

**Canale:** T - Tradizionale **Prg.:** 184

**Perdite**

**Totale PEL:** 99999999

**Accantonamento:** NO

**Perdite Stimate:**

**Evento Multientità**

**Evento Guida:**

**Recuperi**

**Recuperi Intragruppo:**

**Altri recuperi:**

**Assicurazioni**

**Copertura Assicurativa:** NO

**Recuperi Assicurativi:**

**Data Ultimo Recupero\*:**

\* Formato: gg/mm/aaaa

**EDS**

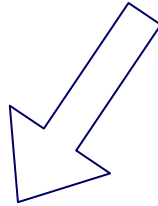
PEL in the form of provision

Amount of other estimated Losses (optional field)

Insurance recoveries (total amount and date of last amount received)

Within the group recoveries  
Other recoveries

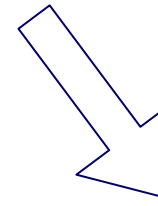
**Objective**  
*(not analyst)*



**IMPLICIT**



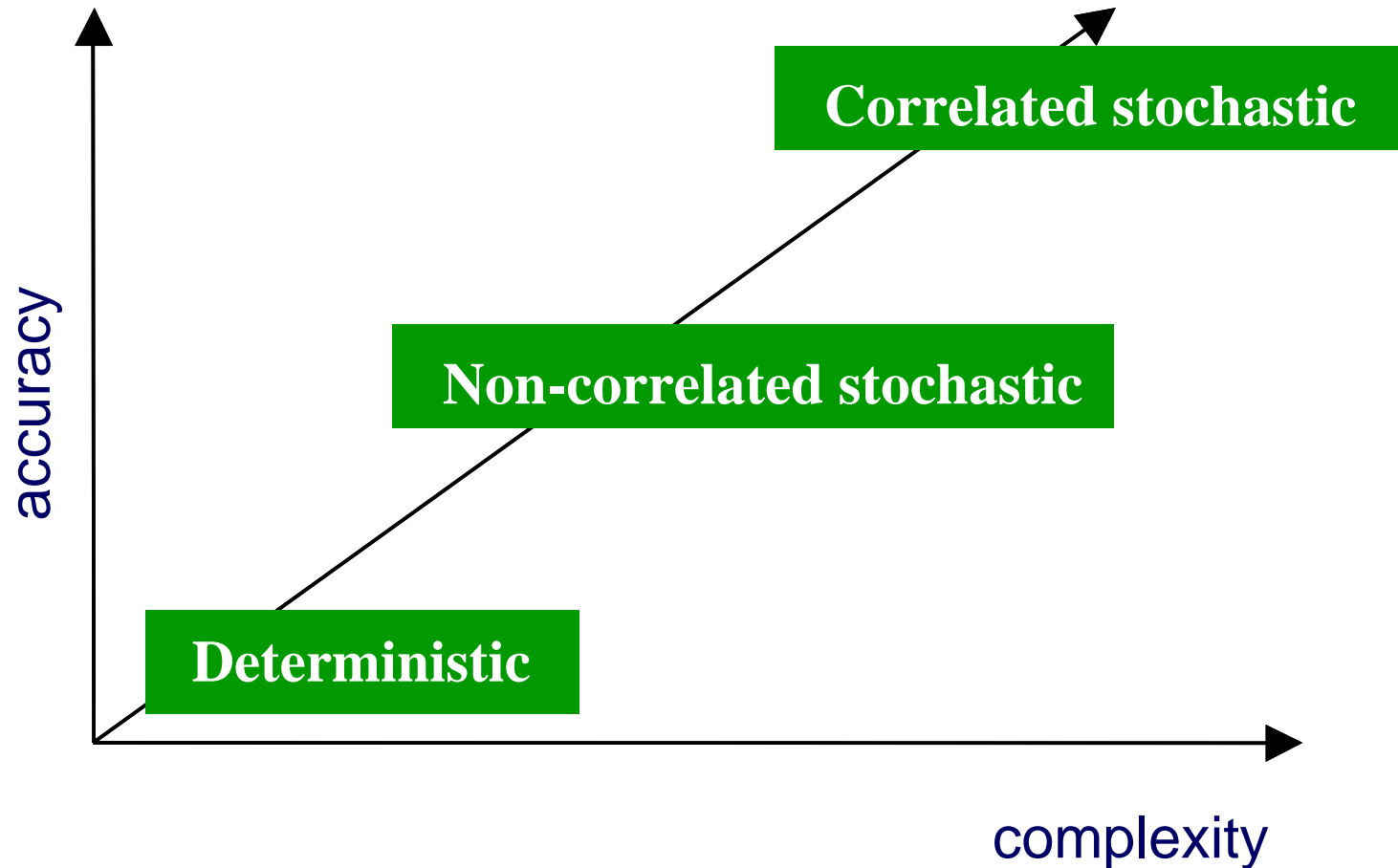
**Implied Market LGDR**  
spread on default free bonds  
= f (Liq; EL counterpart (PD&LGD) )



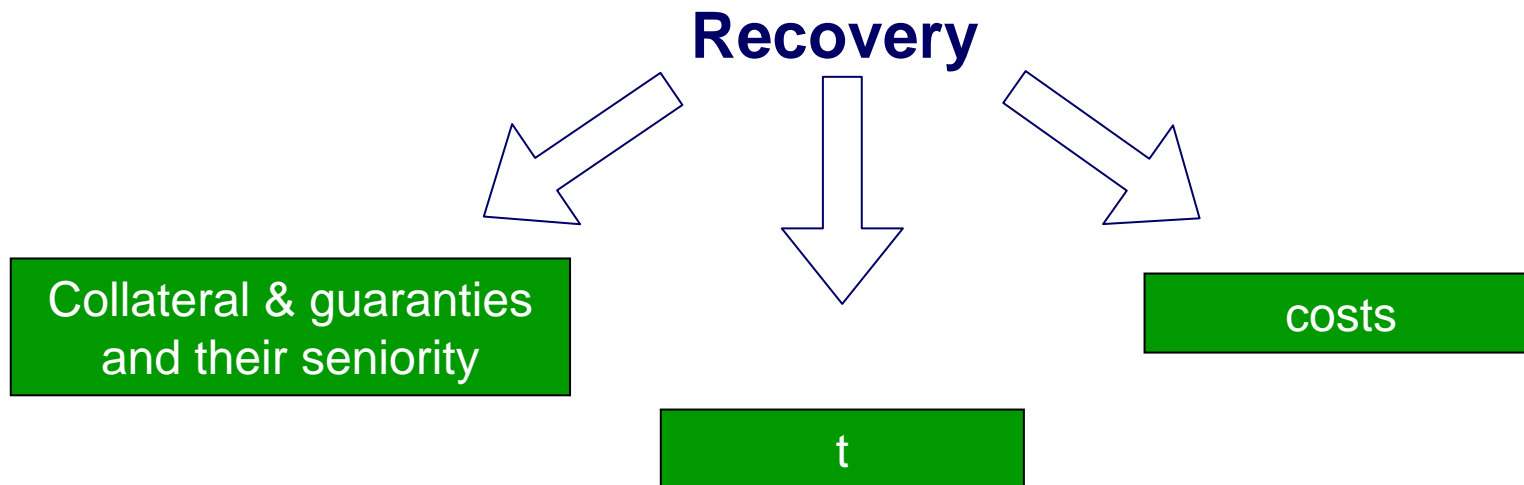
**ESPLICIT**



**To estimate LGDR performing**  
loans a reference data set of  
workedout loans is used



- In the event of a debtor default, the amount actually recovered by the bank depends on a number of different factors. In the first place, the presence of securities and the level of priority that the bank can point to (compared to the remaining creditors) for the reimbursement of its loans; secondly, the financial effect tied to the time that elapses between the default and the actual recovery (even if partial) received by the bank; finally, the direct administrative costs sustained by the bank to obtain the recovery process.



- 1)** The presence of securities, collateral or guarantee, on a claim paid out reduces the loss prospects, generally leading to higher recovery rates than those for non-secured claim.
- 2)** The elapsed time between the onset of the default condition and the partial or total recovery of the amount lent 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.

- A distinction must be made between secured claims and those that are not secured, given that the corresponding loss given default rates are influenced by different factors

## Not secured

$$L\hat{G}D = L\hat{G}D_{ng} = 1 - \frac{\sum Rec_{ng}}{Esp}$$

where:

$L\hat{G}D_{ng}$  = loss given default rate on the non-secured exposure

$Esp$  = original exposure in euro<sup>1</sup> at the moment of default;

$Rec_{ng}$  = actualised recovery flows not resulting from securities (collateral + guarantees)



## Secured

## Data structure for LGD estimation

$$L\hat{G}D = 1 - \frac{\sum_i Rec_{ng} + \sum_i Esc}{Esp}$$

WHERE:

$ESP$  = ORIGINAL EXPOSURE IN EURO AT THE MOMENT OF THE DEFAULT;

$REC_{NG}$  = ACTUALISED RECOVERY FLOWS NOT RESULTING FROM SECURITIES

$ESC$  = CURRENT VALUES OF AMOUNTS FROM EXECUTION OF THE SECURITY

$$L\hat{G}D = 1 - \left( \frac{\sum_i Rec_{ng}}{Esp} + \frac{\sum_j \frac{\sum_i Esc_{ij}}{Gar_j} * Gar_j}{Esp} \right) = L\hat{G}D_{ng} - \frac{\sum_j \hat{R}_j * Gar_j}{Esp}$$

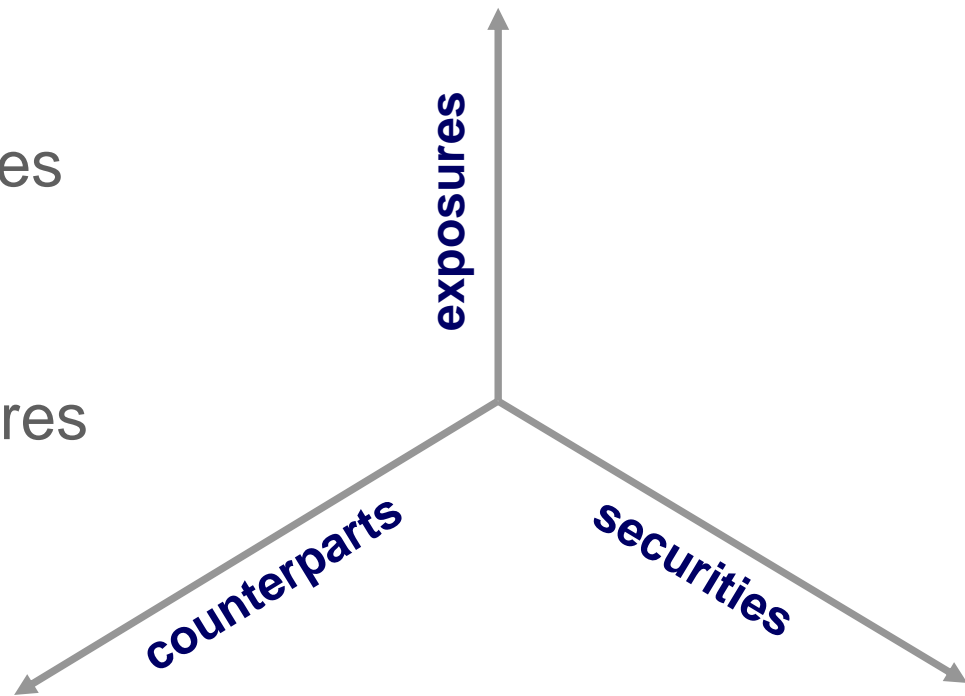
WHERE:

$L\hat{G}D_{ng}$  = LOSS GIVEN DEFAULT RATE ON THE NON-SECURED EXPOSURE

$\hat{R}_j = \frac{\sum Esc}{Gar_j}$  = TYPE J SECURITY RECOVERY RATE

$GAR_j$  = TYPE J SECURITY VALUE, OR THE FAIR VALUE

- **Section A.**  
Information on the counterpart
- **Section B.**  
Information on the securities
- **Section C.**  
Information on the exposures



## Section A

### Information on the counterpart

- The first 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 database (DB) centralised at the group level or in cases of data pooling.

## Section B Information on the securities

- 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).

## Section C

### Information on the exposures

- 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 is 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.**
- It should be noted that, in consideration of the different business practices, as well as the relative diversity of the information available from the various intermediaries, the decision taken by the workgroup, though fully aware of the burdens involved in processing all the information proposed, was to create **a container designed to hold everything.** Each organisation could then refer to this ideal ***benchmark structure*** in order to implement ***its own corporate database on a subset of the fields.***

- The creation of a data-pooling mechanism on a national level, as mentioned in the introductory points, needs a step of selection of the fields belonging to the data structure proposed on the company in order that these fields:
- **represent minimum information to estimate LGDs in a compliant way to Basel2** (in other words, to minimise the burden of reporting for the participants);
- are characterised by the maximum possible **precision and objectivity**, prerequisites that are indispensable for the construction of a shared database containing qualitatively optimal data.

- ✓ Banks + ass./custodian + regulators (observers) needed
- ✓ 1 year to get the right awareness and spirit of collaboration: give a general view of the management issue/not only for capital requirements
- ✓ Identify together all potential uses of collect data both at the single bank level and at the consortium level
- ✓ Identity a common data structure (keep it easy), a clear domain and tools to get the data uniformly collected
- ✓ Clear rules (right and duties)
- ✓ Pay attention to confidentiality
- ✓ Standardise the input via common software
- ✓ Output flexibility
- ✓ .....



Culture and awareness

Interbanking WG (open but better

no more than 15 ) +regulator

- ✓ Sharing experiences (banks that already have an internal data collection DC)
- ✓ Defines goals of internal DC and of interbanking data pooling (DP)
- ✓ Defines corporate governance of the consortium
  - ✓ Define common data structure and domain of the DP – TC1
  - ✓ Start identification of IT infrastructure– TC2
  - ✓ Define tools for uniform data collections – TC1

Data collection at the single bank/group level

**Collection of potential members**

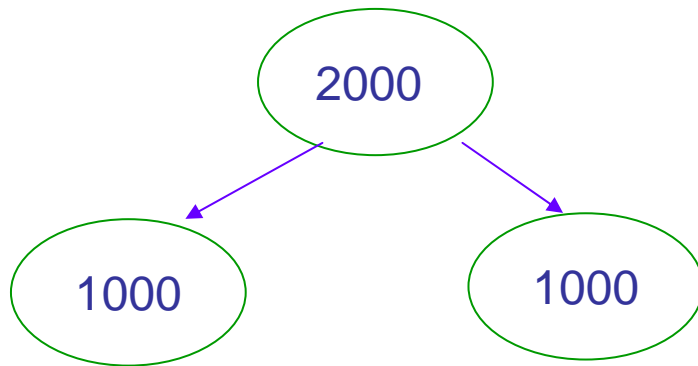
- ✓ WG hands over to Consortium Steering Committee

Steering Committee (first time = DP

members already in the WG)

- ✓ Approves Articles of Agreement
- ✓ Approves budget
- ✓ Formal signature

Annual fee



Divided by 10  
members

Divided by  
Members using  
factor based on fees to ABI  
(proportional to size of member)

- ✓ Software test TC2
- ✓ Statistical and methodological issues – TC3

Data collection at the single  
bank/group level

Future members  
will pay the annual fee  
+ fixed fee = average  
first annual fee of  
first members