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Title of paper

“From Data to Information and From Information to Policy Making – The Story of the Integrated Company and Industry Analysis Platform”

Abstract

With its huge experience of data management of more than 20 years, about 5 years ago, the Real Sector Data Division of the Central Bank of the Republic of Turkey has decided to overhaul its platform radically. It was a revolutionary step towards the challenges of data and information needs of the 21st century by the bank’s very strict standards.

This paper gives some flavour how such a complicated project was bound to succeed in an environment where it was doomed to face reactions from different stakeholders, given the information needs of authorities and policymakers for them to make sound policy decisions in an ever more complicated global economy.

The work summarizes the platform project within a data and technology conceptualization framework by not giving specific examples but by depicting what and how they have become issues to focus on, not giving a standard way of looking at things but trying to exemplify how a classical problem is approached from the eyes of a practitioner.

Data procurement, compilation, reporting and other issues as well as current phases achieved throughout the process are recent updates to the original work.
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II. Introduction

Company Accounts and Financial Ratios (The Quartiles) Reports are an aggregate of individual company financials and managerial information prepared and presented by sector and scale. It is bound to be published every year mid-November by law and by the Official Statistics Program’s publication calendar. The reports involve the aggregation of the three consecutive year financials and other information by sector and by scale, and help

- Policymakers in assessing medium and long term policy decisions on different sectors and scale groups as well as shaping and taking their decisions about / on structural economic policies,
- Bankers in their credit granting decisions by providing them with sector and scale level financial statements and structural information and quartile ranges for financial ratios at these levels
- Participating companies in their business level decision making by providing firm level feedback comparing them with their sector and scale group peers
- Researchers from different disciplines carrying out research on real sector by catering them with miscellaneous data and information

The importance and significance of the study has been recently valued and appreciated by a group of sophisticated users despite the long history of existence and the then current structure of preparation processes with low frequency data and lags between the publication dates of comparable reports (though with smaller sample and hence lower representation). The long run (mis)perception of less usability and practicality due to above-mentioned lags and lower frequencies – though for it being the sole work with the highest representation rate of the whole economy and sectors in GDP sample as well as being the unique example nationwide considering bank loans at corporate level and analysing the aggregated loans by sector and scale over a period – should have been changed by persuading the users that “this work in and of itself had to be regarded as a valuable feedback for longer term strategic, rather than being a toolset for shorter term tactical decision making”. After a more sound and robust infrastructure was established, we presumed publication with a shorter lag, and provision of higher frequency reports along with the annual reports could be easier to handle and to supply.

III. How Was the Situation Before the Platform?

The situation before the platform could be characterised as and/or with attributes - each of which defined and explained in detail in the following paragraph:

Sparseness of the system

1. The system was sparse and needed special effort, energy, knowledge, skills and a whole lot of experience for harmonization and integration of raw, processed and yielded data and information from different sources, platforms and systems,

Proneness to errors and risks

2. The system was prone/open to miscellaneous errors and mistakes leading to longer processing times, lags in final reports and hence resulting in lower efficiency, and
3. There were risks concerning all sorts of data and information losses on PC-based structure,

**Deficiencies of personnel**

4. The reports were prepared by a considerably small group of field experts with considerable amount of individual endeavour,

**Deficiencies of institutional solutions**

5. There were deficiencies of systematic institutional solutions at some levels of data storage, processing and hardware and software,
6. The system was prone to risks due to flexibilities in data access described as levels of predefined and uneasy to alter authorization processes,
7. The operative processing architecture was obsolete,
8. Database architecture was secure but outdated,
9. There was extreme dependence on experts and on specific software(s),
10. The design and implementation phases of Business Objects, VBA, and MS Excel applications were extremely expert dependent and hence were prone to operator risk, and
11. In-house developed applications were extremely dependent on a limited number of coding and design experts,

**High inflexibility and complexity of software and applications**

12. The system was outdated, expert dependent, less flexible and slower mainframe applications with poor visual reporting and processing properties had to be used to a considerable extent, and
13. Identification, listing, data processing, controlling and monitoring processes were inflexible and expert dependent as well as the system structure was static in most these processes,

**Low automation**

14. Sub processes were less automated for even the slightest routines,
15. There were performance inefficiencies due to dependencies in data processing and all sorts of data storage on PCs, and
16. There were performance and time losses due to the sparse structure of the system that used to consist of 5 different software and application media (MS office, Business Objects, Mainframe, in-house developed, Visual Basic and VBA applications),

**Multi-layered and complex reporting**

17. There were so many layers in reporting,
18. Reporting procedures were chaotic, and the transfer of knowledge and experience was uneasy, hence the previous system was prone to extensive loss of knowledge and experience due to HR mobility, and
19. Correction capabilities -even in the tiniest piece of- software applications were low, mostly the procedures were manual and slow due to the bureaucratic layers
in project management, and testing procedures were difficult and expert dependent.

IV. What Was Targeted with the Platform?
The targeted platform could be characterised as having features enumerated below

**Optimal automation with**

1. All the standard and non-standard ad-hoc automated interfaces and in routine procedures,
2. Optimal levels of n-dimensional cube static and dynamic reporting capabilities,
3. Data depots and warehouses that are enabled to store and provide as well as to produce interim and final reports and (freeze snapshots) difference analyses, and
4. Dynamic reporting facilities,

**Batch and automated**

5. Data processing, controlling, transferring operations and with managed layers/levels of confirmation and approval,
6. Data collection capabilities through commercial accounting software, through web service and other data transfer mechanisms, and
7. Analysis, data reporting and publishing abilities,

**Flexible design, coding, visualisation and reporting capabilities with**

8. Facilities of automated and manual as well as flexible visualisation capacity for analysts and end users,
9. Flexible design and coding properties for designers and analysts, and
10. All sorts of flexible reporting and processing media,

**High performance IT capabilities**

11. With powerful, preferably remote server based, processing, storage, security and performance hardware and software infrastructure,

**Timely and fast**

12. Reporting capabilities,

**High flexibility on desktop and server applications**

13. With high visualisation and high flexibility properties and powerful ad-hoc and standard reporting on desktop systems and server applications,

**Ability to do brand new analyses**

14. Where rating and financial and operational distress analyses as well as a whole bunch of other analyses could be carried out,
Experience and knowledge transfer

15. Through training and tutorial facilities on the platform so that experience and knowledge could be easily transferred at lower costs.

V. Who and/or What are the Stakeholders?

The platform involves various stakeholders from different inter and intra organisational groups concerning the current and potential future costs and benefits. Without any rank of importance these can be enumerated as

1. Policy-makers,
2. Academic and independent researchers,
3. Economic agents from real and financial sectors and households,
4. Statistics, research and information technology units/departments of the institution (CBRT), and
5. Other private and public economic institutions and those producing statistics and the academia.

VI. What are the Benefits and Costs?

Benefits and costs related to the new platform regarding both inter and intra organisational stakeholders can be explained as such

A. Benefits

1. Producing and presenting better quality and timely reports would
   a. Help policymakers make healthier and better targeted economic policies,
   b. Lessen the information asymmetry from the viewpoint of economic agents,
   c. Help research units making better quality analyses thus offering more meaningful and relatively more exact policy suggestions, and
   d. Help economic agents taking better economic and financial decisions,

2. Gathering, processing, analysing and presenting more detailed data about real sector would
   a. Help financial and real sector decision-makers shape their short, medium and long term decisions and investment behaviours,
   b. Help statistics units cater better quality processed data and produce better quality reports, and
   c. Help policymakers to make finer adjustments in their short, medium and long term policies by offering them more exact, higher quality and detailed reports,
3. With a macro point of view
   a. With higher technology and its capabilities to improve the product quality and produce better projects, Information Technology Unit’s already high quality and larger project experience would increase internally, and
   b. Capability to scrutinize in depth the complexities and the interdependencies of the economic relationships would be enhanced externally for the benefit of all stakeholders.

4. With high tech hardware and more efficient software
   a. Time costs would be lowered,
   b. Production and training unit costs would decrease,
   c. Data and information quality would be improved, and
   d. With faster feedback in parallel to the diminishing reaction times of all the stakeholders, costs related to mistakes in their decision-making would considerably fall.

B. Costs
1. In terms of legal constraints
   a. Due to the necessity of definition of data customer relationships, time and legal costs might increase.
   b. The project budget, hardware and software procurement procedures being heavily constrained by laws in CBRT, related costs would inevitably augment during and after the project.

2. In terms of resources devoted to the project
   a. Time unit costs related to project requirement assessment, case analysis involving all procedures and processes, design and coding would increase.
   b. Hardware and software costs allocated to the project would increase.

VII. Conclusion and Remarks
Beginning with the introduction of the platform have been realised to some extent or another. The platform is ready to prepare and present aggregated company accounts and managerial information as is. The new system will help overcome most problems of the old one like sparseness, proneness to errors and risks, deficiencies of personnel and deficiencies of institutional solutions, as the new platform brings flexibility, high automation and capability for multi-layered and complex reporting. The next company accounts publication is targeted to be done with the new platform. What we aim with this new process is to analyse, report and publish the data in a fast, flexible and dynamic way. The best part will be the flexible visualisation capacity and the flexible design and coding properties for designers and analysts.
when considered the wide range of stakeholders from academic and independent researchers to policy-makers. The benefits related to the new platform will be timely reports after the first release of the financial information from real sector companies which will help financial and real sector decision-makers shape their short, medium and long term decisions and investment behaviours. From real sector data division point of view, the results from new platform will help making better quality analyses thus offering more meaningful and relatively more exact policy suggestions. Thus, costs related to mistakes in decision-making for all stakeholders will considerably fall with the improved data and information quality.