Lead into Gold: How Smart Cubes Are Poised to Deliver The Fast Track to Enhanced Risk Management and Compliance

By Wolfgang Prinz and Claus Schuster
Against this backdrop, financial institutions themselves are seeking better quality data – in terms of accuracy, timeliness and granularity – to support their business lines and central functions like finance and risk. As a result, firms are finding they need both aggregated data to provide a top-level view of their activities, and a more granular view that allows them to respond to regulators’ and managers’ ad hoc enquiries.

Meeting this dual requirement is no trivial matter. But new regulations from the Austrian central bank could provide a blueprint for solving this data management challenge. The Austrian regulator has defined a series of so-called Smart Cube data reporting formats that require banks to automate and standardize their data collection and validation processes. But to implement this new reporting structure properly, banks are finding that they need to underpin their reporting processes with a robust data management model, as embodied by a so-called Basic Cube approach.

Adoption of the Basic Cube approach, however, holds the promise of enhanced data quality for regulatory reporting. But will it be extensive enough to yield benefits in other areas of the bank, like finance and risk management, which require similar, if broader data sets.

Financial institutions everywhere are facing major data management challenges as they strive to meet emerging regulatory requirements. Broad regulations like FINREP, COREP and MiFID II are all placing new reporting demands on banks and other financial firms. At the same time, individual jurisdictions are introducing their own reporting rules, adding complexity to the overall data management challenge.

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The Regulatory Challenge

Emerging regulations are posing thorny challenges to financial institutions across the board. Not only are new requirements embedded in major regulatory initiatives like the EU’s FINancial REPor ting (FINREP), COmmon solvency REPor ting (COREP) and Markets in Financial Instruments Directive II (MiFID II), or the US’s wide-ranging Dodd-Frank Act or Foreign Account Tax Compliance Act (FATCA), they are also emerging from individual jurisdictions’ more specific actions.

This two-tier regulatory landscape – as well as the ongoing needs of the key business functions of finance and risk management – creates a number of challenges for financial institutions that have activities within these jurisdictions.

The emerging reporting structure points to a need for top-level, aggregated financial information across all business activities to give management and regulators a ‘total’ view of the financial institution’s state of affairs. This needs to be combined with the ability to drill down into more granular information about specific scenarios or situations, both for management purposes or to comply with an ad hoc enquiry from a regulator.

To achieve this ability to draw upon data when required, firms need to ensure they have the flexibility to respond to enquiries in a consistent way. Clearly, they need to be able to respond to regulators’ more frequent enquiries. Most regulations prescribe the frequency and specifics of the data required to populate regular reports. But regulators are increasingly issuing ad hoc queries, drilling down to question underlying data in specific instances.

At the same time, under increasing pressure to perform, senior management is putting the firm’s business activities under higher levels of scrutiny. Managers within the finance and risk functions are seeking more detailed information about ongoing business activities to ensure the firm is on track to meet its performance targets.

Whatever the source of the enquiry – whether from business or the regulator – and whether it is a regular or ad hoc query, the underlying data from which the response is derived needs to be consistent.

Meeting this need is not a trivial exercise. Financial institutions are more complex than they’ve ever been. Tier 1, Tier 2 and even Tier 3 financial institutions are increasingly involved in complex financial instruments and multiple markets both in terms of asset class and geography. Individual business lines may straddle many of these markets, and centralized functions like finance and risk often struggle to keep track of activities and performance.

Many financial institutions make use of several different systems and applications to perform various functions in support of their business activities. These systems are used for specific purposes, and as such their output can be inconsistent in format, timing and frequency. Pulling these data outputs into a consistent data set for management and regulatory reporting purposes will require an overarching data model and an IT infrastructure capable of accepting various data sets and normalizing them to meet ongoing reporting needs.

Finally, all of these requirements need to be met at reasonable cost. After several years of heightened regulatory scrutiny post credit crisis, IT budgets are tight and the appetite for major investment is meager at best.
Banks operating in Austria may be given a head start to achieving the ability to meet this emerging reporting requirement by an Austrian central bank initiative to introduce a new reporting structure starting in 2015.

The system under which financial data are reported to the Austrian Central Bank – Oesterreichische Nationalbank (OeNB) – is being restructured to reflect developments in financial statistics and the IT environment in recent decades, as well as higher demands on data quality and quantity in the wake of the financial crisis.

The objective of the restructuring project is to improve the quality of data being reported to the bank, specifically the methodological soundness and data accuracy, consistency and reliability. At the same time, by automating the process, the project seeks to enhance flexibility and reduce the cost of the reporting system for both the compiler and the reporting agent.

From the middle of next year, Austrian institutions and foreign firms with subsidiaries operating in Austria will be required to report using a so-called ‘Smart Cube’ structure. The Smart Cubes envisaged by the OeNB are multi-dimensional data models designed to satisfy the various national and international regulatory reporting requirements faced by institutions operating in Austria in a consistent manner at the required level of aggregation. Going forward, these regulations may include calculation of banks’ individual risk profiles in accordance with the Austrian Banking Act as well as wider rules like the EU’s COREP and FINREP. This represents a paradigm shift, moving from traditional form-based reporting to delivery of business-oriented data structures.

The idea is for reporting banks to generate Smart Cubes by drawing upon specific rules for data selection and aggregation from underlying systems. As well as meeting – and automating – the data collection process for Austrian regulatory reporting, the hope is that the Smart Cubes can be enriched by additional data to serve a broader range of purposes within the bank.

The main result - the OeNB hopes - will be a consistent methodology for reporting Austrian market activity, streamlining the data compiling and analysis for the central bank while ensuring market participants have the flexibility of data model to meet their reporting obligations and any ad hoc enquiries.

The rolling introduction next year will start with relatively straightforward financial instruments, such as loans, deposits and securities, making it relatively easy for banks to comply. Subsequently will come more

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complex instruments like derivatives, with all related activities. Additionally, more complex European wide regulation like loan-by-loan based AnaCredit are intended to be covered under the new process starting 2017.

Until now, Austrian regulatory reporting has been split into specific areas, segmented by approach: statistical analysis, projection-based, and so on. The new Smart Cubes will be more detailed and oriented along bank-product lines. As such, financial institutions will be required to report by product line: loans, securities, etc.

This is a very different approach. Any given Smart Cube will cover all topics that relate to a specific line of business, drawing upon balance sheet, cash flow, risk, P&L and other ‘adjacent’ data that impact the business line. As a result, the Smart Cubes will generate a more product-oriented view.

Achieving this will require financial institutions to cover all detailed aspects of the banking product to meet the need for the granular data required by the Smart Cubes. Moreover, it won’t be possible to enter this data by hand; all data for the Smart Cube needs to be delivered electronically.

This is the central point of the exercise. The difficulty of reporting doesn’t change. What’s changed is the requirement for normalized data architecture to affect this. For banks, the handling of data needs to be automated for regulatory reporting and for internal operations of the bank.

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Indeed, it’s this Basic Cube approach that could hold the key as the foundation for satisfying the two-tier requirement for top-level aggregated data and more detailed granular data at the operational level for regulatory reporting. As such, it also represents the first step towards a consistent approach to data management beyond the regulated activities. And, if successful, the appeal of the OeNB initiative may grow wider than the Austrian marketplace alone; as with so many regulatory initiatives, other regulators may seek to adopt the Smart Cube/Basic Cube approach, raising the prospect of a consistent methodology across multiple regulatory jurisdictions.
For reporting institutions, the introduction of the Smart Cube approach in Austria marks the first step toward consolidation of risk, finance, balance sheet, and other information into a single data model. As well as standardizing the format in which the regulator receives the data it requests, thereby allowing banks to meet the Austrian regulatory reporting requirement, the new structure will yield higher data quality for reporting institutions.

But the banks won’t be able to manage all aspects of their business at the Smart Cube level; much of the compiling and validation needs to be performed earlier in the process, underscoring the need for a Basic Cube approach. Furthermore, the OeNB has made it clear that it expects institutions not only to meet the data requirements of the Smart Cube for ‘normal’ reports, but that they are also able to respond rapidly to ad hoc inquiries.

The OeNB has stopped short of prescribing the Basic Cube format. As a result, although firms can support the Smart Cube requirement with direct links from existing internal systems, the message from the regulator is that it strongly suggests banks adopt the Basic Cube as the environment for collecting, compiling, validating and normalizing underlying data sets before they are presented for reporting via the Smart Cube.

Those banks that choose not to follow the Basic Cube route, it seems, run the risk of falling foul of the regulator should they fail to make validated data available in very short timeframes in response to a regulatory enquiry.

The OeNB has worked with the industry in Austria, including Wolters Kluwer Financial Services, to agree on the design of the Basic Cube, with theoretical foundation of the data model based on the widely used Entity Relationship model, which serves as a common language for the formulation of reporting requirements.

According to a 2013 discussion paper published in the Journal of Banking Regulation by Erich Hille, a senior advisor in the statistics department of the OeNB, the Austrian central bank believes “The Basic Cube could be implemented as part of the logical data structure of the data warehouses at reporting banks. It will be used to then define future reports to the central bank. These reports are based on ‘Smart Cubes’ and must fulfill legally defined reporting requirements. The design of the Smart Cubes makes it possible to use the data for many different purposes at the central bank. The data model thus will effectively and efficiently cover nearly all reporting requirements and will boost data quality.”

Once data has been compiled to fit the Basic Cube model, it should be straightforward for any bank to meet the standard reporting requirement and respond rapidly to ad hoc queries. Because the regulator has been working with the banking and software communities to define the Basic Cube model, it will be much easier for banks to understand what data the regulator is asking for when it sends these ad hoc requests. And because all data validation takes place at the Basic Cube level, all data passed into the Smart Cube will have already been verified, removing a step in the process for responding to unanticipated questions.

In short, by adopting a Basic Cube approach, and ‘packaging’ that with the Smart Cube as required by the OeNB, institutions can realize immediate benefits and streamline regulatory reporting operations.
From Basic Cube to Broader Data Management

The Basic Cube nicely covers today’s and – with the appropriate modifications – future regulatory reporting data needs. However, more and more business requirements in the finance and risk management space are driving similar data management challenges based on a largely overlapping data set.

Further, regulators are starting to ask financial institutions how they can ensure reconciliation between what they are reporting to them and the data they are using for their decision-making and strategic processes.

The real appeal of adopting a broader data management approach runs much deeper than meeting the immediate regulatory requirement. Adopting a true data management approach – by using an established software platform to automate data collection, validation and orchestration – can yield broader benefits in finance and risk management. The aim has to be to support both business as well as compliance in their endeavors while ensuring consistency and auditability.

Firms in Austria are now realizing that this new regulation represents a complete overhaul of the way regulatory reporting works in that country. But while the task at hand is onerous, the initiative represents a key opportunity for firms to derive major operational benefits, which can be used to manage data quality, flexibility and integration with other applications in adjacent areas.

Under the new model, the broader data management platform will contain all the granular data required to meet the needs of risk, finance and compliance departments. This will allow banks to use the same underlying data model and data management platform to service the data needs of the risk management and finance departments.

This greater flexibility enables rapid response to business needs throughout the business, and ultimately holds the promise of lower operational costs of data management and reporting.

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In all cases, transparency is essential. The platform needs to generate an audit trail to show how any report or response was collated, and that process needs to comply with the regulators’ prescribed methodology. And the same infrastructure needs to be capable of handling both ‘normal’ (i.e., scheduled) reports and ad hoc enquiries at rapid response rates. Many banks operating in Austria have concluded that the best path to achieving this level of automation is by adopting a broader data management platform approach. Many now have projects under way to build or buy the necessary IT platform infrastructure. But the timeframe is tight, and many firms are finding that setting up the data processes and rules ahead of time is the major bottleneck to meeting the deadline.

Part of the issue is understanding the immediate and potential scope of the system requirement. To meet the new requirements from the outset, the platform needs to be capable of resolving the data management/data automation challenges presented by the regulators, and integrate with any underlying applications that generate data to meet the requirement.

Further down the line, however, the platform will need to be able to handle the requirements of additional regulations as they are added to the Austrian reporting regime. Here, banks may find themselves drawing on the same underlying data sets to meet reporting requirements for IFRS, FINREP, CRD IV, Asset Encumbrance and other emerging rules and regulations. These regulations will further drive the aforementioned consolidation of data requirements between regulatory reporting, finance and risk management.

This ‘future-proofing’ requirement points to the need for ongoing regulatory expertise as well as a robust systems approach. In many cases, banks are reticent about approaching the regulators directly to clarify aspects of the reporting requirement; often, they need the services of an intermediary who can help fine-tune the requirement with respect to the specific activities of the bank in question.

Smaller financial institutions, meanwhile, may not have the appetite or resource for the kind of wide-ranging data management infrastructure the new reporting regime envisages. For them, use of a third-party, possibly hosted solution may be the answer.

Meanwhile, the Austrian initiative fits with broader regulatory trends elsewhere. This raises the prospect of others following later if the Austrian experiment is successful. Indeed, the central bank of Austria has presented its approach to other countries and the European Central Bank. It’s entirely feasible that we may see it transform into a European or even global initiative in the long term.

Since adoption of this approach could extend to other regulatory regimes, banks are more likely to adopt this structure even where it’s not formally required. But all banks should at least understand the concept, whether or not it gets adopted more broadly: this may come into effect in your regulatory regime in some form or another.

What is clear, however, is that the adoption of the Smart Cube regulatory reporting framework in Austria represents the beginning of a potentially very swift move toward a single data model for all finance and risk calculations. And the addition of more regulations to the framework will only result in more requests for automation.

It’s essential that banks move immediately to get their systems in place to meet the 2015 Austrian deadline. But with the OeNB pitching its solution to a broader audience, banks operating outside of Austria should take note: Smart Cubes may be coming to a market near you.

The Emerging Data Management Requirement

When the new Smart Cube requirements start to come into force in 2015, it’s clear that financial institutions operating in Austria will need a robust data management platform in place that will allow them to handle business and market information at a detailed level.

The main requirement is that the platform needs to be rules-based so that it can aggregate all the data the regulator requires while at the same time supporting drill-down into the underlying data for ad hoc queries.
How Wolters Kluwer Financial Services Can Help

Wolters Kluwer Financial Services has been working with its clients in Austria to provide expertise and technology solutions to meet the new Smart Cube requirement and help adopt the Basic Cube framework. We bring to the table a robust data management platform combined with the regulatory expertise required to meet the data challenges of the new Austrian reporting regime.

Wolters Kluwer Financial Services’ subject matter experts maintain close relationships with the OeNB and other regulatory bodies around the world. Through these relationships, our analysts stay abreast – and often ahead – of the current state of regulatory play, and are able to pass along this expertise in the form of guidance for clients.

More broadly, what the Smart Cube / Basic Cube approach doesn’t resolve entirely is the issue of enterprise-wide regulations traversing risk and finance. If a bank needs to re-engineer in order to meet the new requirement, it’s prudent to consider all other regulations that could be affected, and build for the entirety of that requirement.

Wolters Kluwer Financial Services can help future-proof your reporting infrastructure by applying the core Austrian Smart Cube approach throughout the organization, and using a broader data management platform to extend coverage to finance and risk departments and ensure compliance two to three years out. By taking this approach, firms can avoid repetition as additional requirements fall into the new reporting structure.

As they address this paradigm shift in regulatory reporting, Austrian banks have turned to Wolters Kluwer Financial Services for its expertise in understanding where they stand with respect to the new requirements and how best to organize themselves and their data. Wolters Kluwer Financial Services introduced its solution set to address the emerging Austrian requirements in early 2014, and is now helping customers ramp up their compliance efforts, both through software implementation and ongoing regulatory advice and counsel.

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As of March 2014, multidimensional Smart Cube reporting capabilities have been added into Wolters Kluwer Financial Services’ solution suite. Smart Cubes enable the harmonization of the data collection methods to ensure data consistency and efficient data quality processes, and thus effectively and efficiently cover nearly all Austrian reporting requirements.

Wolters Kluwer Financial Services’ SVENSON reporting suite is a trusted solution that covers all reporting requirements of Austrian banks and insurers. The reporting suite is based on reliable architecture, is easy to use and allows a high degree of automation and integration with upstream banking systems.

Smart Cubes is only the first in a series of changes in the reporting system, whilst broader changes are being triggered still by Basel III, CRD IV, or the expected adaptation to Europe-wide regulatory standards such as IFRS and FINREP. Demands on future reporting system solutions are increasing and are giving rise to a variety of requirements in terms of functionality, data management and technology.

The SVENSON reporting suite is part of Wolters Kluwer Financial Services’ solutions for the areas of finance, risk and compliance. These solutions are based on a central Data Management platform, which makes data available at the level of individual transactions for a wide range of possible uses. The database can be extended with the use of additional functional modules, making optimum use of the existing data interfaces.

Wolters Kluwer Financial Services has an end-to-end solution suite designed on an integrated data layer addressing tactical and strategic needs of finance, risk management, performance and regulatory reporting business areas of financial institutions.

Robust Data Model – Our integrated data management framework for multiple use-cases across the finance, risk and regulatory compliance and other functions. This approach can aid in establishing a standardized approach to regulatory and client reporting across different countries and regimes that the firm is active in.

Integrated Modular Solution Suite – Our solution addresses the combined requirements of finance, risk management, performance and regulatory reporting in an integrated modular solution suite, delivered on and driven by a business-oriented data management architecture.

Unrivalled Regulatory Reporting Coverage – Wolters Kluwer Financial Services has the only solution that offers banks, insurance companies, and other financial institutions reporting solutions compliant with the local regulation in over 50 different jurisdictions globally, regularly updated and maintained via the subscription-based Regulatory Update Services.

Unique Regulatory Update Service – The Regulatory Update Service (RUS) is a subscription based service incorporated into regulatory reporting solution, maintained by our team of experts, making sure that reporting solution is kept up to date with the on-going changes in regulation and local requirements on a continuous basis, minimizing risk of non-compliance and the associated cost to stay up-to-date.
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Smart Cube Data Management Checklist:

1. **Assess your firm’s status with respect to the incoming Smart Cube environment.**
   - Research how the new OeNB regulation will change the way your organization reports to the Austrian central bank. Not every regulation will affect all types and sizes of institution.
   - Explore how the OeNB timeframe for adding requirements to the Smart Cube structure will impact your firm’s reporting requirements over time.

2. **Understand the Smart Cube and Basic Cube model and data requirement.**
   - Designate a team to assess how to adopt the Smart and Basic Cube data structure.
   - Identify all source data and availability of data granularity required.
   - Understand the data validation and business rules base required.
   - Develop a high level road map that fits with the Smart Cube regulatory timeline

3. **Evaluate the application of the data management approach to key business areas like risk and finance.**

4. **Organize your data to meet the data requirement for a product-line oriented data structure.**
   - Establish an internal data structure that adheres to the product-line approach.
   - Ensure the structure takes account of adjacent data sets including balance sheet, cash flow, risk and P&L data for each product line. At a minimum, be prepared that this will be possible going forward.

5. **Decide on build or buy.**
   - **Build:** Assemble a team that will build out the data management platform and reporting requirements.
   - **Buy:** Contact existing vendor or start a RFI/RFP process. Here it is also important to understand future inclusion of regulatory changes over the contract period.
   - Work with the internal and/or external team to define a clear project plan.

6. **Implement a data management platform capable of supporting the Smart Cube data model; execute against the project plan.** The criteria below are to be met whether the decision was build or buy.
   - Choose an IT platform that has been designed to handle data capture, validation, storage and normalization for regulatory reporting.
   - The platform should be rules-based so it is capable of aggregating all data required by the regular and can support drilling down for rapid responses to ad hoc enquiries.

7. **Engage with regulators and third-party subject matter experts to assess ongoing ‘maintenance’ requirements of the Smart Cubes to meet the emerging Smart Cube reporting requirements.**
   - Establish relationships with key regulatory staff and independent consultants who can keep your team appraised of changing regulatory requirements going forward.

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About Wolters Kluwer Financial Services

Wolters Kluwer Financial Services provides more than 15,000 customers worldwide with risk management, compliance, finance and audit solutions that help them successfully navigate regulatory complexity, optimize risk and financial performance, and manage data to support critical decisions. With more than 30 offices in 20 countries, our prominent brands include: AppOne®, ARC Logics®, AuthenticWeb™, Bankers Systems®, Capital Changes, CASH Suite™, FRSGlobal, FinArch, GainsKeeper®, NILS®, TeamMate®, Uniform Forms™, VMP® Mortgage Solutions and Wiz®.

Wolters Kluwer Financial Services is part of Wolters Kluwer, which had 2013 annual revenues of €3.6 billion ($4.7 billion), employs 19,000 employees worldwide, and maintains operations in over 40 countries across Europe, North America, Asia Pacific, and Latin America. Wolters Kluwer is headquartered in Alphen aan den Rijn, the Netherlands. Its shares are quoted on Euronext Amsterdam (WKL) and are included in the AEX and Euronext 100 indices.

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