A Whitepaper by

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Enterprise Information Management- Maturity Evaluation

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This paper presents a method for evaluating the maturity of an Enterprise Information Management (EIM) program. The focus of maturity, in this case, is on the management aspects of EIM and not on the technology capabilities of an organization.

Traditionally, the main focus of data management, and now EIM, is on technology. What metadata management tools are available? What ETL tool should I be using? What MDM (master data management) vendor should I use? Who are the leading data quality tool vendors? Though all of these questions (and hundreds more) are valid, appropriate questions, they do not address the most important aspect of management, the processes and people needed to do the job.

This document also presents the findings of the NEOS Enterprise Information Management (EIM) Survey. A key component to this research is the NEOS Data Management Maturity Model, or NEOS DM³, which has 5 maturity levels. A research study consisting of interviews and questionnaires was conducted with feedback received from 17 financial services and insurance companies.

In this paper, we will review the DM³ to provide context for the research and then the review the results collected from the survey.

Background

Enterprise information management (EIM) is an enterprise-level discipline implemented for defining, describing, structuring, and governing information assets across organizational and technological boundaries with the aim of improving corporate transparency, improving operational efficiency and mitigating corporate risk.

The discipline involved in enabling an EIM program is similar to those of our classic data services or data management organizations. As the acronym EIM implies, true enterprise data assets have to be included. Traditional data management processes and disciplines generally stop at structured data in databases; EIM expands the scope to include *all* manner of data, regardless of how it is physically stored or created.

The culmination of both technology and business drivers has created the need for organizations to truly manage data. Through the past +15 years, organizations that depend on data as a key asset to their business have evolved their methods of managing data. This evolution has been forced, to some degree, by industry technology trends such as inexpensive storage, faster-better-cheaper processors and more robust/easier to use reporting and analysis tools.

But business drivers have also weighed in considerably: increased focused on self-service and end-user reporting, business-specific views, and most notable at the current time, regulatory and compliance requirements. With the need for better transparency into corporate data comes the association of EIM to corporate risk management. It is now a priority of risk management executives to consider how data really is managed, its quality, who is touching it and how it is being audited.

These business demands mandate that Enterprise Information Management include the governance of structured *and* un-structured data as well as a true inclusion in enterprise direction and architecture (which in many corporations today is managed separately). These mandates create a tight bond with business segment leadership.

NEOS Data Management Maturity Model

The NEOS Data Management Maturity Model (DM^3) is a method of assessing a level of an organization's EIM maturity across four Dimensions. Each of these Dimensions is assessed on a five point maturity scale. The intent of the DM^3 is to measure the *operational effectiveness* of an EIM initiative, and not necessarily the technology, or implementation specifics, of an EIM organization's performance. The Levels of maturity can be used to identify maturity across all the Dimensions (overall EIM maturity) and can also be presented for each Dimension.

The five levels of the NEOS DM^3 are:

Maturity Level	Definition
1- Initial	A reactive organization. Depends largely on individual knowledge and actions. Little process. Existing processes are not scalable. Knowledge is tribal and "spoken word". Data quality is poor, redundantly kept and unpredictable for business use. Understaffed, overworked, schedules are often missed or exceeded for cost/time.
2- Emerging	Work is identified and scheduled. Knowledge and standards are documented and distributed as a course of learning. Data quality is identified as an issue, but not completely acted upon. Staff levels are low, but are "knowledgeable" staff.
3- Defined	Organizational missions and roles are understood. Methods for managing enterprise data, or "master data", are established. Partnerships with business segments are defined. Data quality, governance and management are in place.
4- Managed	Engagement models are in place and work is scheduled, planned and measured. Enterprise data ("master data") is identified and actively managed, though still growing for some aspects of the business. Data quality measures and standards for data integration, modeling, naming, etc. are enforced. Service levels with business partners are established.
5- Optimized	Engagement models are optimized to work across the organization and are in-sync with business demands. Organization is involved in proactively directing data alliance with corporate initiatives. Data quality, governance and management measures are in place and monitored through performance metrics. Focus is on continuous improvement of corporate data health.

Table 1: DM^{3}Levels

The definitions are provided to gain context to the dimensions within scope of this research. The four Dimensions of DM[3] related to this research are:

Dimension	Definition
Management	How the Respondent's team works from an organizational perspective. Where does it align and how is it working with others?
Execution	Focus is on how work is actually performed. Costing and engagement models, impact of implemented standards, etc.
Process	Review of an organization's processes used to govern data, standardize work, and support project execution.
Perception	Perception of the group by other organizations, as well as self-perception.

Table 2: DM3 Dimensions

NEOS Independent EIM DM3 Study

NEOS conducted an independent industry study by surveying a total of 17 companies of roughly equivalent size and scale. The participant pool consisted of companies that are in the financial services or insurance business. Surveyed organizations had existing data management organizations which had been established for at least 5 years.

Respondents ranged from line management (Director) to executive (CIO/CTO). Association of company names to responses is not provided for confidentiality purposes.

Respondents answered 20 yes/no, or multiple choice questions that aligned with the DM[3] Dimensions. Additional questions were posed regarding priorities and trends respondents were projecting in the next several years.

The EIM Study was sponsored by a NEOS customer. With the customer, NEOS conducted this survey from different perspectives, such as from within the EIM team, IT and business partners and executive management. The intent for the customer was to get a well-rounded view from all perspectives in the organization. With the survey only a self-assessment was able to be collected.

EIM Cumulative Averages

This section presents the cumulative average score for all organizations responding to the survey. The levels are described; and a brief summary of characteristics, vetted by the DM^3 research process, is presented. As the reader progresses through this report, the supporting details for these characteristics are aligned.

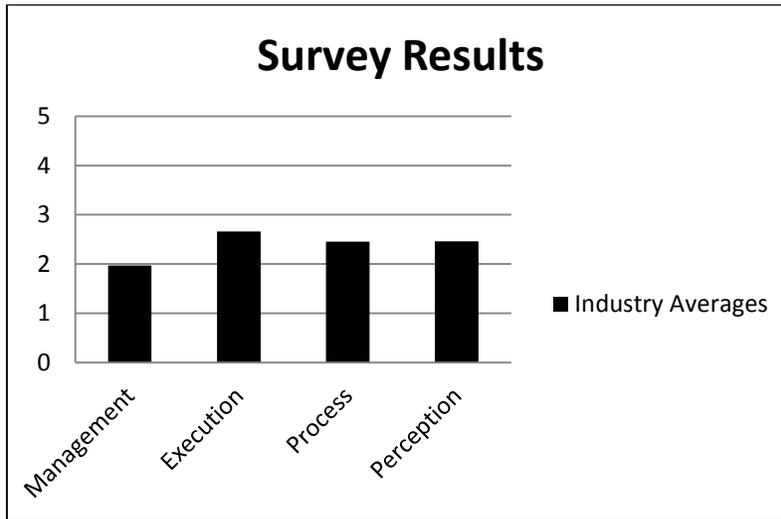The cumulative industry average score using the DM^3 is **2.39**.

Figure 1: Aggregate score by Dimension.

Using the NEOS DM^3 definitions, most Respondents found themselves to be:

Level 2: ***Emerging***	Work is identified and scheduled. Knowledge and standards are documented and distributed as a course of learning. Data quality is identified as an issue, but not completely acted upon. Staff levels are low, but are "knowledgeable" staff.

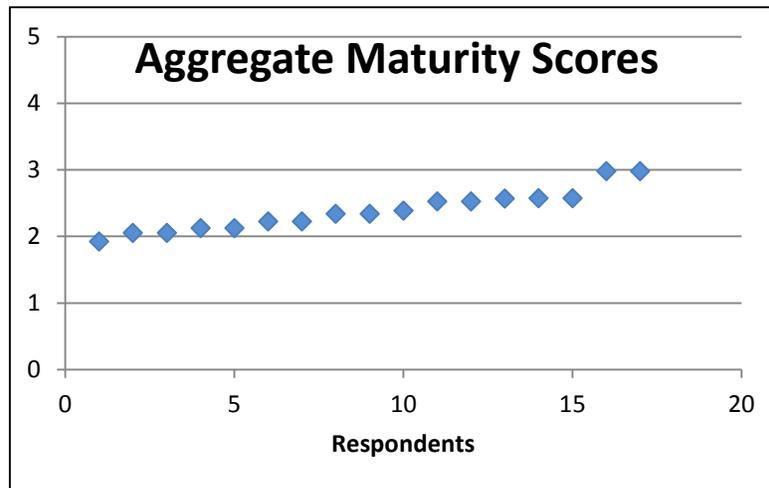Another interesting view of this data is by individual respondent.

Figure 2: Individual maturity scores

An initial reaction to this might be, Wow, no one is a 4???" The reasons for this are pretty straightforward:

1. Individual Dimensional ratings scored higher/lower but leveled out about the same from an aggregate view.

2. There's always room for improvement.

3. It's pretty darn tough to make it to level four – everything changes.

An interesting point in the two companies rating at level 3:

- Both companies have had consistent leadership and direction for more than four years.

- Their teams initially supported single-line business (a division with a specific business purpose) and have begun adding additional business lines and responsibility.

- They cycled, in their history, to very high scores, but decreased as the additional lines were brought on (we'll see later that this was because processes and practices were not hardened, negatively impacting (Time to Optimization).

- They have enjoyed senior leadership sanctioning to act more strategically than their peer group, which is largely managing to project-based budgets.

It is a combination of leadership; foresight and sponsorship that helps teams grow in the maturity scale. Use of technology is not necessarily a key driver up, or down, the maturity scale.

Feedback Results by Dimension

This section provides feedback from each Dimension of the DM³.

Dimension: Management

The intent of the Management dimension is to measure how a team conducts itself from different perspectives and operates as a unit. We are measuring how a team is aligned to business operations and how it conducts business with partners, customers and peer groups.

The average Maturity Score for all Respondents for this Dimension was **1.97.**
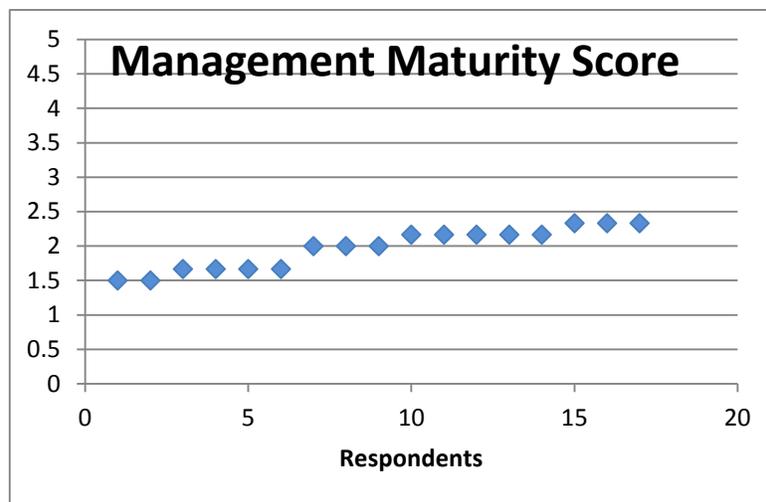

Figure 3: Management Maturity ranking vs. all respondents.

An interesting point here is that the average scores do show a lower maturity level than the other Dimensions. The questions related to this Dimension included topics such as:

- Use of management metrics to measure performance of the data organizations' performance.

- Understanding of the EIM purpose within the organization and peer groups.

- Whether the EIM group is funded separately, or on a project-by-project basis.

The majority of the respondents provided the same response to the questions that many were funded through project work and very few received funding for strategic initiatives. The responses indicate a general under-appreciation for the value the EIM or data teams provide to an organization.

What is recommended in these cases is to create an EIM Marketing Campaign. Keep communications between your EIM program and partners open and clear. If you are not using a set of management metrics, start doing so and communicate those metrics to your constituents.

Dimension: Execution

The Execution Dimension measures how your organization is executing projects. The intent is to determine how the unit operates from pre-project initiation through project close-out.

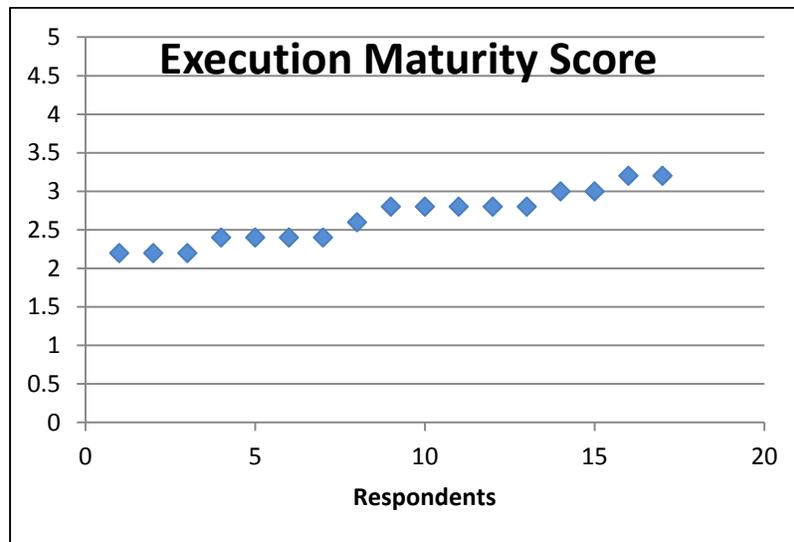The average Maturity Score for this Dimension was **2.66**.

Figure 4: Execution Maturity ranking vs. all respondents.

Of the four DM[3] Dimensions, the Execution Dimension ranked as the highest scoring Dimension. This is by no means surprising. Since the responding EIM teams have been in existence for some time, it is because they deliver well on projects. Almost all Respondents claim exceptionally high track records for delivering on data architecture commitments.

Where the scores drop are around topics of repeatability and standardization. It is common, from these Respondents, that the data architecture will get driven from outside factors such as development teams, or short cuts may be taken as dictated by project scheduling (typically, starting with an end date and trying to make everything fit).

Additionally, almost every Respondent recorded that if there is a stewardship program in their organization, there is some confusion and overlap in responsibilities. This understandably impacts execution as peers may see that confusion, or redundancy, either through the execution of the project, or through cost allocations in budget.

Dimension: Process

The Process dimension measures the organization's use of processes and standards in executing its work. The goal is to have a high level of process adoption without stifling productivity or creativity within an organization. Too little process may indicate a reactive work force where each solution is a custom build.

The average Maturity Score for this Dimension was **2.46**.

Figure 5: Process Maturity ranking vs. all respondents.

The questions in the survey for this Dimension target the standardization of processes within the EIM teams. Part of the questioning leads to the implementation of MDM strategy or the management of centralized reference data.

Interestingly, two Respondents recorded that *no* standardized processes exist for designing, developing or maintaining data. In both cases, the Respondents teams had recently gone through organizational changes and seem to be in a period of flux.

Encouragingly, nine Respondents have implemented standard processes for all aspects of data and have also associated their data to business domains. However, there is an interesting observation that even though these organizations have established processes, those processes are either at an early stage or require adjustment as the Management and Execution Dimensions attest to discrepancies between Process and Execution. Sometimes what is written on paper is not executed in practicality.

Dimension: Perception

The Perception dimension attempts to measure a subjective topic; how the organization is perceived in the organization by senior management, customers and partners, and by its own teams (self-perception). It is very important for EIM and data teams to understand how they are perceived in an organization. Perception, whether accurate or not, can impact funding, ability to influence architectural direction or being able to staff up correctly.

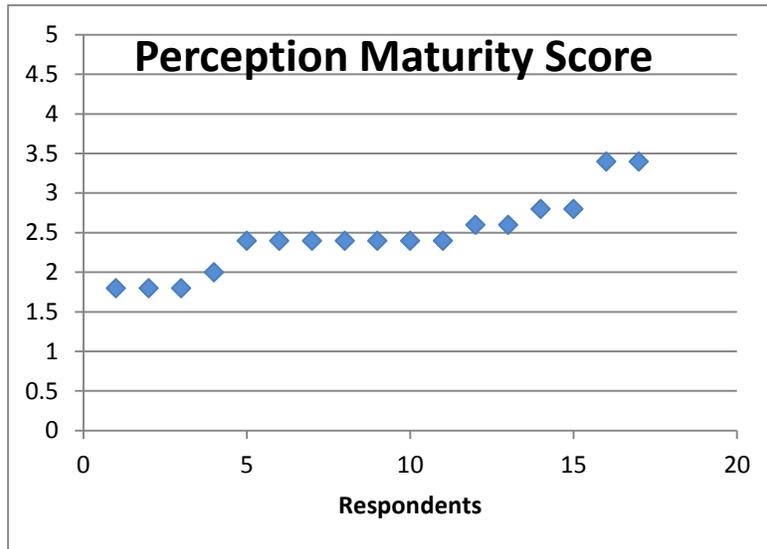The average Maturity Score for this Dimension was **2.46.**

Perception Maturity Score

Figure 6: Perception Maturity ranking vs. all Respondents.

Of all the Respondents, only four responded that they are perceived as "A necessary partner for success," meaning that they are engaged proactively and throughout each engagement and are contributing as an active partner in the execution of technology and business strategy.

In general, the most consistent feedback in this Dimension was that costs are presented as "consistently high." All respondents provided this feedback. Some also stated that they are aware that the organization is in a "growth stage" or "infancy," as one Respondent put it.

From the actual project that we conducted for this survey's sponsor, external groups all perceived the EIM team to be "too expensive." However, the EIM team itself understood that it is perceived as "too expensive," but countered that they were accurate and realistic with their estimates and their budgeting practice. This speaks, again, to the ability of an EIM team to market itself and promote communication in the performance of its work.

EIM Time to Optimization

Each time a data management organization increases its scope of responsibility by the addition of a segment organization (e.g. Personal Lines Claims) or a business segment (e.g. EMEA annuities) or other substantial increase in customer base (an acquisition; scaling globally; working with a newly formed partner, etc.), it is expected that there is going to be a ramp-up through the DM[3]. Most organizations in the survey are keeping up with day to day activities but are aligned to single business line support.

If your organization anticipates an expansion in responsibility, it will need some time to "come to market" with its strategy, vision, staff and processes in order to bring the new addition to an efficient operating state. Based on the maturity level of your EIM program, you will need time to become completely effective with your new constituents. This is referred to here as Time to Optimization or "TTO".

Based on where you are now, TTO should *decrease* each time a new constituent is added to your area of responsibility. This is based on the assumption that processes and execution methods have been hardened, through experience with existing constituents, and adopted by the new constituent.

A balance is required between sticking to processes, disciplines, etc. when working with a new partner. The emphasis will always be on delivering value *immediately*. Therefore, the communication efforts have to be well established and practiced in order to get the new partner to have an understanding that by adopting the practices of your EIM organization, they will be able to gain success faster than in the past.

Economies of scale cannot be reached if each new partner or constituent is dealt with uniquely. Staff will not be able to be leveraged across segments, your company will not be able to leverage strategic dollars on data master sets or commercial data; and partners will not be able to work consistently between data teams.

Business Drivers and Data Management Impacts

Throughout the independent study, and through industry media research, a given set of Business Drivers for financial services companies had been solicited and collected. This information is presented in this section. These business drivers can be seen as trends or considerations for business and EIM/DM practices. In addition to the business drivers discussed, associated Data Management actions, or attention points, are provided. The reader can use this input as a basis to generate a strategy for positioning for business alignment.

Revenue Growth

The Financial Service and Insurance industries will focus on revenue growth (vs. cost savings and contraction of the previous 3 years) through the next 3 years. This will entail a period of expansion through acquisition (particularly while the market is soft), addition of new markets through product innovation, and leveraging/expanding existing clients by cross-sell opportunities. Perhaps more so than in years past, revenue growth for those companies who are in a strong cash position will further distance them from competition while consumers will look for the "strong to survive" and will move to named brands with competitive price points.

Fast Data

In the area of EIM, data organizations will need to provide faster, more flexible, solutions to provide an environment where product developers can research and design products without incurring full IT production costs. From an EIM perspective, understanding authoritative sources for topical data will become a critical aspect, as the forced assembly of "quick data" necessitates the understanding of where to pull *accurate* data from. They will need to understand and manage more data such as external data, internal, loosely integrated data, and unstructured data. The need to assemble this data into a harness that can be used by the business will be a critical factor. If an organization cannot provide this level of service, business units will pull the data into localized data sets themselves, and economies of scale, overall time to market and cost will compound.

Regulations

With the expansion of business and products into new areas, additional regulatory obligations will surface. Either through political/legal mandate, or by simply adding distribution of business product in a new region, both business and data will need to be compliant with regulatory schemes. The emergence of private cloud architectures will become more common in the coming three years as IT organizations look to provide flexibility while containing costs. The modernization of applications and infrastructure to SOA in the Cloud will be an enabler for faster product time-to-market.

Respondent Areas of Focus

In the survey, we asked respondents to provide some insight into what areas are targeted for focused priority within their organizations. We observed four key themes from the responses.

Respondent Focus	Survey Response
Business Expansion	• 12 Respondents noted high growth in their areas. • 3 Respondents noted expansion into global areas of responsibility.
Improved utilization of data	• 5 Respondents noted that analytical modeling and analysis will be a top priority in 2011. • Cross-segment data integration was reported by 15 out of 17 Respondents as a top priority in 2011. • 10 out of 17 Respondents list data quality improvement as a critical initiative. • 5 Respondents listed "determining the business value of the data" as a key driver.
Data Management Operational Effectiveness	• Top Priorities for Respondents: • Increase speed of data acquisition • Centralization of data and processes for increased efficiency • "Sandbox" environments as data exploration playgrounds.
Regulatory & Compliance	• 12 out of 17 Respondents name Reg/Compliance as a "top concern" in 2011. • 2 Respondents noted the need for enhanced ability to support data archival and purging strategies, as related to compliance requirements.

Table 3: Survey Respondents "key themes" collected from the EIM Survey

Closing

In closing, I would like to summarize the key take points of this paper:

1. If you are in charge of an EIM initiative, program or team, consider assessing your core operating principles prior to debating technology to enable those principles.

2. Use a method to measure your EIM maturity, such as the DM3 presented here.

3. Track maturity through the life of your EIM initiative and measure improvement.

4. Communicate effectively through a marketing plan. This will help in re-enforcing the good value your EIM initiative brings to the enterprise in a consistent manner.

5. Prepare for "Time to Optimization" when working with new partners or clients.

6. Business will look for revenue opportunities as the primary business driver. Be prepared to answer the call with practical, repeatable and proven EIM offerings.

About NEOS

NEOS is a management consulting and technology services firm specializing in the global insurance industry with deep experience in holistic modernization, enterprise data and business operations consulting. Clients range from large multi-line companies to specialized providers. Solutions encompass legacy product and closed block management, operational and IT risk, and business-technology strategy. Services include process, organizational and operational consulting, enterprise architecture strategies and design, deployment and data analysis.

About the Author

Ernst Renner is CEO of Vgo Software and NEOS, whose focus areas are business and IT modernization and information management. Ernst established NEOS in 2000, specializing in enterprise and information architecture services. He has grown the company in the past ten years to provide a focus on application modernization (via Vgo) and holistic modernization solutions for complete business and IT transformational offerings (via NEOS). NEOS also provides business-oriented data services, with an emphasis on the analysis, utilization and management of corporate information. He brings over twenty years of high-technology experience in large-scale system technologies.

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