Title
Audit Management Systems –
Exploration within Internal Audit in the Netherlands, trends and practical tips

Commissioned by
IIA Netherlands

Working group
Judith Berendsen (IT Audit Manager, de Volksbank)
Paul Kollen (Internal Audit interim professional, KollenARC)
Imran Nashir (Internal Auditor, MN Services N.V.)
Olav Terwijn (Interim Audit & Risk professional, Audit 2 Company Value B.V.)

We would like to thank Mischa van der Vliet for his contribution to the design of the survey.

Disclaimer
The results of this survey include a summary and analysis of experiences and opinions elicited by means of a questionnaire among internal audit functions in the Netherlands and interviews with a small number of suppliers. These results do not necessarily represent the position of IIA Netherlands or the authors of the survey. In addition, the reactions in the survey are the experiences of the audit functions concerned. This survey is not a qualitative analysis of the Audit Management Systems (or different versions) mentioned and the functionalities they offer. It was not possible in all cases to achieve sufficient volume for statistically founded analyses, nor was this the aim of this survey. The quantitative analyses should be interpreted as indications about the satisfaction of an IAF with a product or functionality.

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1. **INTRODUCTION**

Steve Jobs once said that as people, we are good at making tools. Tools to make our actions, our work, and our lives easier. He saw the computer as the ultimate tool for mankind. And we see that around us every day. We communicate with each other through video calls, write reports on a word processor and look for nice images online to make a presentation more appealing. Look inside an average company and there are always projects underway aimed at further digitalisation, for example to work more efficiently or provide a better service to the customer. Every business must keep up with the times, or they will be overtaken by reality. The same applies to an Internal Audit Function (IAF). When the world around us changes, we auditors must also change to stay relevant. Not just in terms of knowledge and skills, but also in our way of working and the resources that support us.

This survey helps the Chief Audit Executive (CAE) to get an impression of the Audit Management Systems (AMS) market in the Netherlands. Software that supports the IAF and facilitates the audit process and associated audit project files. We outline the trends and developments, costs, satisfaction with the software and subjects to take into account for the selection and implementation of an AMS. The aim of this survey was not to present an extensive package comparison. However, the results can form the basis for the selection of an AMS.

**BACKGROUND**

IAFs generally use a variety of systems to support their work. These may be tools in the field of data analysis, process mining and robotic process automation (RPA). In addition, IAFs use systems to support the audit process for an individual audit (workflow and recording), but possibly also to manage the audit universe, the risk analysis and building creating the (annual) audit plan. All latter systems are bundled together under the title AMS. These may include systems that only offer functionality for the IAF, or that are part of a compliance or integrated risk management solution.

Research companies like Gartner periodically conduct market research for AMS. However, the investigated AMS and the conclusions in these reports often relate to the American market. What does the Dutch market look like in terms of using AMS? Which trends and developments are there? This report offers more insight into this.

IIA Innovation Platform (in Dutch)
The Innovation Platform highlights innovative solutions in the field of internal auditing, with good practices, relevant background literature and the names of experts (within or outside internal audit) who have experience with the innovation in question and who would like to share it. Audit management systems are going to substantive development and can stimulate innovation within the IAF. Have a look at www.iia.nl/schets-iaf-2025.php
**APPROACH**

IAFs felt the need to obtain more insight into the AMS market in the Netherlands and best practices relating to selection and implementation. Firstly, the research team made an inventory of the market. A survey was then sent to 220 CAEs known to IIA Netherlands to share experiences relating to the use and reasons for purchasing such systems, as well as tips and learning points in selection and implementation processes. Subsequently, several suppliers were contacted, and information was obtained on the latest trends relating to AMS, as well as implementation best practices from the supplier’s perspective. Finally, a validation was performed with a large group of CAEs during two Roundtables, after which the report was produced.

The research started in Q4 2020 and was conducted on behalf of IIA Netherlands.

**CONTEXT**

mainly operate internationally (58%) and conduct an average of 50 audits a year. The average number of FTEs is 15. The following figure shows the response rates per sector. The financial services, industrial and retail sectors are the largest.

**STRUCTURE**

This document is structured as follows:

- Chapter 2 summarises the outcomes of the survey.
- Chapter 3 elaborates on the results of the survey in various themes, including functionality, satisfaction, selection and implementation.
- Chapter 4 outlines the main trends and developments on the market.
- Chapter 5 ends with the most important insights for using an AMS validated by several CAEs.

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1 Market Guide for Audit Management Solutions, Gartner, 28 februari 2019
Magic Quadrant for Integrated Risk Management, Gartner, 16 juli 2018
RiskTech Quadrant 2017 – Audit Management Solutions, Charis, mei 2017

**Figure 1: Internal Audit Function by industry**
IIA Netherlands sent out a survey to all Internal Audit Functions known in the Netherlands. 66 CAEs working in a wide range of sectors completed the survey. This provides a fair impression regarding the use of Audit Management Systems in the Netherlands. The interim results were presented and validated in the Roundtable Retail and the CAE Forum, which featured a discussion around four challenging statements. This qualitative input was incorporated in the report.

In this survey, an Audit Management System is regarded as an ‘off-the-shelf’ system used by the IAF to support the audit function and facilitate the audit process.

### 2. THE OUTCOMES AT A GLANCE

Within the 33% that do not use an AMS, one in five CAE’s is considering implementing an AMS in the foreseeable future. Four out of five CAE’s use (existing) company IT-resources such as SharePoint, networked drives or internally developed systems.
3. RESULTS

The market for AMS solutions can be characterised as a mature market, in which a rough distinction can be made between suppliers who focus their solution on internal audit only, and suppliers who offer their solution as a sub-module in an integrated whole of compliance and/or risk management functionality.

WHICH AUDIT MANAGEMENT SYSTEMS ARE USED IN THE NETHERLANDS?

Of the 66 respondents, 67% said they use an AMS. Within the group of IAFs that use an AMS, TeamMate (Wolter Kluwer) was mentioned most often with 23%, with a strong representation in the financial sector. NARIS GRC is used by 16% of the IAFs (almost half of which in government organisations) and thus comes in second place. This means that about 61% of the respondents say they use a different AMS. Some suppliers are mentioned several times. However, nearly a third of the IAFs say they use an AMS that is only mentioned once. It can therefore be concluded that the landscape of AMS use varies considerably across the IAFs in the Netherlands.

![Figure 2: Overview of AMS in use within the Netherlands](image-url)
SATISFACTION TOP 3 WITH MOST USED AUDIT MANAGEMENT SYSTEMS

The top three most used AMS in the Netherlands was further analysed. The number of times these were selected by IAFs was sufficient to gain insight into the satisfaction with the product, guidance during the implementation, user support and training to be able to use the product on a scale of one to five stars. Interestingly, the most used AMS (TeamMate and NARIS Audit) score relatively lower on satisfaction, and the AMS that score highest on satisfaction (OpsAudit and Pentana Audit) tend to have been in use by the respondents relatively recently.

Product name: **OpsAudit**  
Supplier: **AuditBoard**

AuditBoard offers a comprehensive GRC platform that is focused on audit, risk management and compliance professionals to manage today’s dynamic risk landscape with a modern, connected platform. OpsAudit can be purchased separately or as part of their GRC platform. AuditBoard is based in the United States and offers its services globally.

Average number of years in use among respondents: 2 years  
Website: [https://www.auditboard.com/product/operational-audit/](https://www.auditboard.com/product/operational-audit/)

General satisfaction:  
Guidance during implementation:  
User support:  
Training and education: 

Product name: **Pentana Audit**  
Supplier: **Ideagen**

Ideagen has its headquarters in the United Kingdom and is considered a leading supplier of software solutions to strongly regulated industries. Ideagen offers its governance, risk and compliance solutions globally. Pentana Audit is a risk-based audit and control management system, and is a fully integrated solution, built by auditors for auditors.

Average number of years in use among respondents: 3.8 years  
Website: [https://www.ideagen.com/products/pentana-audit](https://www.ideagen.com/products/pentana-audit)

General satisfaction:  
Guidance during implementation:  
User support:  
Training and education: 

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2 For the sake of completeness, all AMS selected by IAFs are listed in the appendix. The number of times that these AMS were selected was not substantiating enough to give a reliable impression of the satisfaction aspects mentioned. They are therefore not included in this section of the report.
Product name: **NARIS Audit**  
Supplier: **NARIS**

NARIS is a Dutch software company that offers audit, risk, and compliance products. These can be used as a separate module or as an integrated solution within the NARIS GRC platform. In addition, modules are offered in the GRC domain such as insurance, contract, incident management, and a strategy map. NARIS Audit is offered as a SaaS solution.

**Average number of years in use**  
among respondents: 1.6 years

**Website:** [https://www.naris.com/nl/grc-software/audit-management/](https://www.naris.com/nl/grc-software/audit-management/)

**General satisfaction:** ★★★★☆  
**Guidance during implementation:** ★★★★☆  
**User support:** ★★★★☆  
**Training and education:** ★★★★☆

Product name: **TeamMate AM**  
(End of development), **TeamMate+**  
Supplier: **Wolters Kluwer**

Wolters Kluwer is originally a Dutch company, and from that perspective has operated on the Dutch market for many years. The TeamMate+ product is offered as SaaS, or as an On-Premise solution. Mostly known as an independently operating AMS, it can also be integrated with any system using standard APIs (including Reporting/BI, 1st/2nd line systems, etc.). Extra modules can also be supplied, such as the Audit Analytics solution or a fully integrated Agile Audit module.

**Average number of years in use**  
among respondents: 6.9 years


**General satisfaction:** ★★★★☆  
**Guidance during implementation:** ★★★★☆  
**User support:** ★★★★☆  
**Training and education:** ★★★★☆

**SATISFACTION WITH THE AMS FUNCTIONALITY IN RELATION TO ITS IMPORTANCE**

To assess the most common functionalities in an AMS, the following questions were asked in the survey:

- How important is the presence of a functionality in the AMS to you?
- How satisfied are you with this functionality?

The answers to these questions were then linked in the matrix on the next page. Functionalities in quadrants 3 and 4 are the functionalities that IAFs consider important. In principle, these functionalities should also be included as ‘must haves’ in the selection process. Functionalities in quadrant 1 are considered less important. The suggestion for an IAF is therefore to include these functionalities as optional in the selection process.
AMS FUNCTIONALITY MATRIX

Figure 3: AMS functionality matrix. Importance versus satisfaction

Legend
The larger the circle, the more the functionality is used. The smaller the circle, the more 'Not applicable' was selected in the survey. It is possible here that the functionality is offered but (consciously) not used, that the functionality is not present in the AMS or that an alternative system is used (for example registration of findings in a system that is also used by the second line).
Quadrant 1 - Functionality not decisive for AMS choice
This quadrant contains the functionalities that are less important to IAFs and with which they are also less satisfied. In principle, functionalities in this quadrant do not include any decisive selection criteria for choosing an AMS. They should therefore be less prominently evaluated or demonstrated. Although close to the upper limit of importance, some functionalities from the survey drop out of this quadrant, with ‘time registration for auditors’ being the most prominent. There may be a link between functionalities considered not or less important by IAFs and the degree to which they are further developed by AMS suppliers.

Quadrant 2 - Functionality not decisive for AMS choice but ‘nice to have’
In principle, this quadrant does not contain any functionalities that are decisive selection criteria for choosing an AMS, but do score high on satisfaction among IAFs. However, the scores from the survey did not lead to examples for this quadrant. For suppliers, this is a difficult category. On the one hand, customer loyalty could be strengthened with such functionalities, while on the other hand not too much can be priced in due to a lower relevance for IAFs.

Quadrant 3 - Functionality ‘should have’ for AMS choice
This quadrant contains the functionalities that are important to IAFs, but with which they are less satisfied. The functionalities Audit Universe, risk analysis and annual plan stand out particularly due to their low satisfaction score. These functionalities therefore do not sufficiently meet the wishes of the users. For suppliers, this provides opportunities to fill the gap in satisfaction, particularly because ‘Not applicable’ is also frequently selected here.
Besides the above functionalities, the reactions highlighted several missing functionalities in the current AMS, and where suppliers could distinguish themselves by developing and offering these functionalities:
- Dashboards: to obtain insight into statuses.
- Report generator: the ability to automatically generate audit reports.
- Analyses: the possibility to conduct AMS analyses on operational data.

Quadrant 4 - Functionality primary decisive for AMS choice
This quadrant contains the functionalities that are important to IAFs and with which they are satisfied. These include the most common functionalities, such as the management of electronic work papers, review possibilities and performance of the IAF. These are also the functionalities that concern the most important activities in the audit process, and are the primary selection criteria for choosing an AMS. For suppliers too, it is vital to score well on these functionalities.
AVERAGE COSTS COMPARED WITH SIZE OF IAF

All IAFs were also asked how much is spent annually on the use of their AMS with the intent to calculate average costs. In nine cases, this information was not shared, either because the costs were not known, or because they preferred not to share that information. In their answer, the respondents could give the range (in euros) in which the costs fell. By combining that with information about the size of an IAF, an average calculation could be made relating to the range (in euros) in which the costs fell of an IAF of a certain size³. Several comments should be made with respect to the following diagram. This is an indication of the costs. There seems to be a link between the costs and the number of years that the AMS has been used. For example, because a one-off licence was purchased, meaning no recurring costs. In addition, regular infrastructural IT costs are often not included in this data if there is an On-Premises solution and associated internal IT staff, because in the IT organisation, these are often included as a whole (for example via a fixed allocation). For an AMS purchased according to the SaaS model, these infrastructural costs are included in the costs. This can give a distorted picture between various indications.

Figure 4: Average costs of an AMS compared to the size of an IAF

³ The highest option which could be selected was above 250,000 euros. For the calculation, the sum of 250,000 euros was kept for both the lower and upper limit of a range. This could give a distorted picture with respect to costs for IAFs larger than 50 FTE. On the other hand, there was only one IAF in the data set larger than 50 FTE which spends more than 250,000 euros on annually recurring costs for an AMS.
REASONS WHY AN AMS IS SELECTED

About 36% of the respondents said that in the past two years, they had completed a selection and implementation process for an AMS. Reasons for specifically choosing the current AMS are the following (from most to least important):

1. The functionalities offered by the chosen AMS
2. More efficiency of the audit process
3. Integration with GRC systems, together with the first and second line functions
4. Support from supplier
5. New functionalities (data analysis, Artificial Intelligence, etc.)
6. Delivery model (SaaS, On-Premises, etc.)
7. Price model offered
8. Better able to meet professional standards
9. Regular Life Cycle Management

Whichever the motivation for purchasing an AMS, when it concerns replacement, attention should also be devoted to phasing out the existing AMS. This also involves topics like archiving audit project files, data migration and secure destruction of old systems and data. The respondents indicated that the duration of the selection process can vary from one month to over a year, with an average of about 6.5 months.

Best practices from IAFs for an effective selection process

To achieve an effective selection process, the respondents provided several tips for the selection process. These can contribute directly or indirectly to an efficient selection process:

- Call or visit IAFs with an already implemented AMS. Choose organisations that operate in the same sector, have the same size or have similar characteristics as your own IAF.
- Select an AMS based on desired and available functionalities.
- Have the supplier show the audit process in a live environment of the AMS. Discuss the possibility of gaining access to a demo environment for a brief period.

In addition, the respondents mentioned various aspects obstructing a successful selection, the most important being:

- Base selection on functionalities that are not likely to be used.
- Insufficiently involve suppliers in the selection.
- Insufficiently involve internal parties, such as IT and Procurement.
EXPERIENCES WITH IMPLEMENTATIONS

Implementations can succeed or fail for various reasons. A successful implementation process depends on how the support of the supplier is experienced. The implementation lead time varies from one month to more than six months with an average of about five months. The support for the implementation is generally experienced as positive. On average, satisfaction is rated at 3.7 on a scale of one to five.

Figure 5: Satisfaction with the support from the supplier in the implementation of an AMS

The most-frequently mentioned experiences relating to why the support is rated positively are the following:

- Involved and good guidance by the supplier and/or consultant
- Short, effective implementation by the supplier
- Attention to the demands/wishes and translating those to and solutions (certainly in combination with customisation of the AMS)

Best practices from IAFs for an effective implementation process

Besides the importance of good guidance, the respondents mentioned several factors for achieving a successful implementation. These can contribute directly or indirectly to an efficient implementation process:

- Get your own team to do most of the implementation
- Strong alignment between the functionalities of the AMS and the desired audit process
- Solid testing and trial runs when desired

On the other hand, the respondents indicated which factors should be avoided:

- Implement unnecessary or unclear functionalities
- Insufficient consideration of the consequences of the design choices
BEST PRACTICES FROM SUPPLIERS CONCERNING SELECTION AND IMPLEMENTATION

In contrast to an IAF, which undergoes an AMS upgrade or replacement once every so many years, AMS suppliers are involved in several selection and implementation processes a year. As such, they have an excellent understanding of what works well for both parties in such processes, as well as being familiar with the trends and developments in the future use of AMS.

Based on interviews with several renowned AMS suppliers, the following best practices can be distinguished in terms of selection and implementation processes.

**Selection process**
This concerns the process to select the AMS supplier who is expected to have the most suitable AMS solution (within the set budget).
- Ensure clear understanding within the IAF about how the new AMS should be used.
- Make a clear comparison between the current and desired situation (where will the IAF be in three to five years time)
- Limit the Request for Proposal (RFP) to the basic requirements and several important specific wishes based on the desired situation. This will ensure more clarity up front for both IAF and the supplier about what is not desired.
- Ask the AMS suppliers for a roadmap from the current to the future situation.
- Consider the adaptability of an AMS, particularly when the solution veers towards customisation based on the wishes and less towards standard functionality.
- Make sure that the wishes of the IAF are not snowed under by those of one or more heavyweights from Risk and Compliance (for AMS solutions with integrated GRC functionality).
- Consider the general culture within the IAF with respect to technology in the AMS considerations.

**Implementation process**
This concerns the process to achieve a successful implementation of the most suitable configuration of the chosen AMS solution.
- Clearly chart the process from current situation to desired situation before the implementation is started.
- Make conscious choices between standard functionality and customisation and thus the extent to which the process will be adapted to the system or vice versa.
- Ensure an effective change management process to guide people in the use of a new system, particularly if the current process is being adapted to the new system.
- Involve the right decision-makers in the implementation process from both the IAF and Risk and Compliance (for integrated GRC solutions) with the right knowledge and authority, so that the decision-making becomes a joint effort.
- Be prepared to make concessions in this respect (this applies to all parties involved).
- Ensure you have people in the implementation process with sufficient substantive and technological knowledge to prevent too much reliance on IT.
- Consider conducting a pilot audit to test the preferred configuration before final implementation.
- Choose the most extensive possible audit, characteristic for the company.
4. **TRENDS AND DEVELOPMENTS**

Most suppliers of AMS solutions offer a good audit core functionality. Some also offer an integrated data analysis functionality. However, this is often relatively basic and cannot be compared with those of the specialised data analysis and business intelligence software solutions, such as ACL, IDEA and Tableau. In addition, IAFs make more frequent use of data lakes and analysis capacity available in the organisation for audit analyses instead of buying or developing their own audit data analysis functionality.

As in many other software markets, in the AMS market further digitalisation is also clearly the trend. Both the established companies and newcomers to the market try to respond to this with their products and distinguish themselves by applying attractive, modern nuances in sub areas of the core functionality. This might involve the following areas:

- Workflow of the audit work documents
- Monitoring of action plan implementation by management
- Automated creation of an audit report from the results in the work steps
- Automated audit creation management reporting

The clearest development in the framework of this digitalisation is that most AMS suppliers offer their product as SaaS product or have plans to do so. The choice here is to do this **On-premises or in the cloud**. Most IAFs choose the latter form.

In addition, suppliers of AMS solutions generally monitor the developments in the IA profession well so that they can assess whether and how they can support or facilitate these developments with their products. Take the following recent developments:

- **Dynamic risk assessment**: in this concept, the idea of the traditional annual audit plan that is revised several times a year based on risk analysis is replaced by a philosophy whereby the audit plan is adapted very frequently using a (more) dynamic risk analysis. Facilitating the latter is ideal as a functionality to which AMS suppliers can respond to, certainly in view of the results in chapter 3 where, for example, the risk analysis functionality is not used by all IAFs.

- **Agile auditing**: this concept concerns the audit approach and with that ensuring the audits keep pace with the changing processes and speed of the organisation. This will generally result in more ‘smaller’ audits with a (much) shorter lead time than a typical audit.

- **Robotic Process Automation (RPA)**: this concerns automating repetitive steps in processes. With respect to the audit process, the possibilities for suppliers mainly lie in the operational field (for example, management of work papers).

- **Artificial Intelligence (AI)**: this concerns the learning ability of the system. The question is to what extent audit work in general is easy to learn so that AI could be used. This work is still very multi-faceted and unique, and this will not change in the future.

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4 This chapter uses interviews with suppliers from the most-frequently used AMS in the Netherlands (see chapter 3.1.) The interviews were based on availability of the suppliers and involve Wolter Kluwer, NARIS and AuditBoard.
5. FIVE THEMES FOR CHIEF AUDIT EXECUTIVES FOR PURCHASING AND USING AN AUDIT MANAGEMENT SYSTEM

During two Roundtables (Roundtable Retail and the Chief Audit Executive Forum) organised by IIA Netherlands, a discussion based on stimulating statements was conducted about the use of an AMS. On that basis, several themes were distilled which, from a holistic point of view, can be used as a basis for a business case for the purchase or use of an AMS.

CATALYST FOR EFFICIENCY AND QUALITY CONTROL
Use an AMS to simplify your own audit process, particularly by standardising repetitive work and output, such as work paper management and issue tracking. This will ultimately generate more time for the actual ‘brain’ work. In addition, it will provide more control over quality management. When designing the AMS, consider the alignment with your own audit environment to achieve optimal creativity and flexibility. Retrospectively adjusting the operational audit process in the AMS takes more effort than designing it well from the start.

Although an AMS is regarded as a catalyst to improve the operational audit process, this does not apply to all audit activities, mainly those that transcend the operational audit process. The experience of the CAEs that the processes to be audited can vary from year to year, or be carried out with a different intensity, and that AMS in general do not address that dynamic in a satisfactory way.

A SATISFIED AUDITOR
Nothing is more frustrating than a system that doesn’t work or work that needs to be re-performed because an application failed. An auditor regularly uses an AMS for work paper management, reviews or issues tracking. The less frustrating a system is, the more satisfied the auditor is with the system and the audit process. This is not necessarily regarded as a precondition by CAEs, but it is a significant bonus. An AMS ensures that everyone in the IAF works the same way. This offers advantages for new employees who are thus offered a structured way of working.
A MUST-HAVE FOR THE DIGITAL TRANSFORMATION OF AN INTERNAL AUDIT FUNCTION
An AMS is regarded as a must-have to keep pace with digitalisation in the rest of the organisation. Be aware of the perception of the outside world with respect to the used AMS as the IAF’s role in the digital transformation of the organisation grows. Findings may be less easily accepted if an IAF’s own process is not digitally in order with no or insufficient AMS.

For your own digital transformation, do not use the AMS merely as a recording instrument. Also use it as an instrument to measure the most important results of the IAF and thereby work in a more data-driven way. In addition, the AMS is indispensable for working from home or other hybrid work forms.

WITH IMPROVED EFFICIENCY MORE OPTIONS TO USE FREE CAPACITY
Focusing on automation will free up capacity that would otherwise not have been used efficiently. In the bigger picture, this might mean that the IAF has more staff available to do more engagements. During the discussion among the CAEs, it was mentioned that a CAE must therefore make sure that a new AMS is not regarded as a way of cutting the number of auditors in the IAF. Also, the cost aspect must not predominate the selection of a (new) AMS. In the long term, investing in the digitalisation of the audit process benefits the IAF in the form of more efficient use of auditors.

ONE TOOL FOR ALL ‘LINES OF DEFENCE’ AS CONDITION FOR GOOD COOPERATING 3 LINES
If the desire is to use one integrated tool for the first, second and third line, make sure there is a common starting point. This can prevent unnecessary discussions. Most importantly, ensure that the same language is spoken (for example risk terminology). Agree who will take the lead in such a process and make sure that the interests of the other lines are considered. If the 1st line takes the lead in designing an integrated solution, for example, this makes you, as 2nd and 3rd line, dependent on them, which can restrict flexibility. During the selection and implementation, it is important to regularly check whether the solution is still feasible and not too disruptive. It is useful here to study the origin of the integrated solution. If the roots of the system are in risk management, then that is reflected in the audit module. The modules that apply to the IAF must be properly evaluated from the perspective of the 3rd line. Experience has shown that all the lines must look together for the right balance to ensure the success of an integrated solution.

So, don’t forget the needs of the IAF. Take that as a starting point and check whether it is appropriate to purchase an integrated solution for all lines. The consensus here is that the needs of the 1st and 3rd line differ is such a degree that a solution which suits the 1st line does not usually suit the 3rd line. If integration is desired, then it is the view that more synergy is possible between the 1st and 2nd line or the 2nd and 3rd line.
List of suppliers mentioned by the respondents to the survey.
This list does not represent the entire AMS landscape.

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