Adopting technology for discovery 2019

In this research, we sought to examine drivers around three goals for content discovery: creating a single point of entry to diverse content collections, improving back-end integration of multiple databases, and generating fresh insights through the use of smart technologies. This builds on our 2018 discovery research where we explored how information professionals define content discovery and how to generate insights through the use of data analytics.

This report includes analysis and overview in five chapters:

- Part 1 - introduction
- Part 2 - foundation - definitions and desires
- Part 3 - keeping up with technology
- Part 4 - single point of entry/back-end integration
- Part 5 - fresh insights through smart technology

"This data point strongly reflects the frustration that we at Jinfo hear from so many of our customers – they are not yet sure what the technology can do, what it should be used for, or what the expectations of their stakeholders might be.

"We can see that respondents tend to be more positive about their current situation in addressing the challenge of a single environment/ back-end connections than they are about the challenge of creating fresh insights through AI.

"They have little expectation of increasing the time or money they spend on developing approaches to meeting the goal of fresh insight through the use of AI and similar technologies… We can create learning and testing resources, as well as develop new products and solutions; but if organisations do not release investment, progress will continue to be slow."

Robin Neidorf

Jeanette Eldridge

Part 1 - introduction

Introduction

Building on previous research conducted in 2017 and 2018, the "Jinfo survey - adopting technology for discovery" draws out aspects of the adoption of technology for content discovery by information professionals across a range of industry sectors.

The term "discovery" itself is ambiguous, and in 2017, we focused primarily on categorising and understanding how professionals in the industry use it. We identified three main goals that fall under the broad umbrella of "discovery":

- Creation of a single point of entry to a diverse content collection

- Improvement of back-end integration of multiple databases

- Generation of fresh insights through the use of data analytics.

The first two of these goals are very similar, and in fact, can be seen as two sides of the solution to siloed information sources. One side approaches the problem from the user's perspective (interface) and the other side approaches it from the technology perspective (back-end connections).

In 2018, we took these categories and surveyed an audience of information managers and professionals to understand how they prioritise and address these goals.

In 2019, we updated the survey to gain further insights into how information teams are approaching these challenges. We repeated many questions from 2018 so that we could draw comparisons over time, but we also included new areas of questioning to reflect emerging interests.

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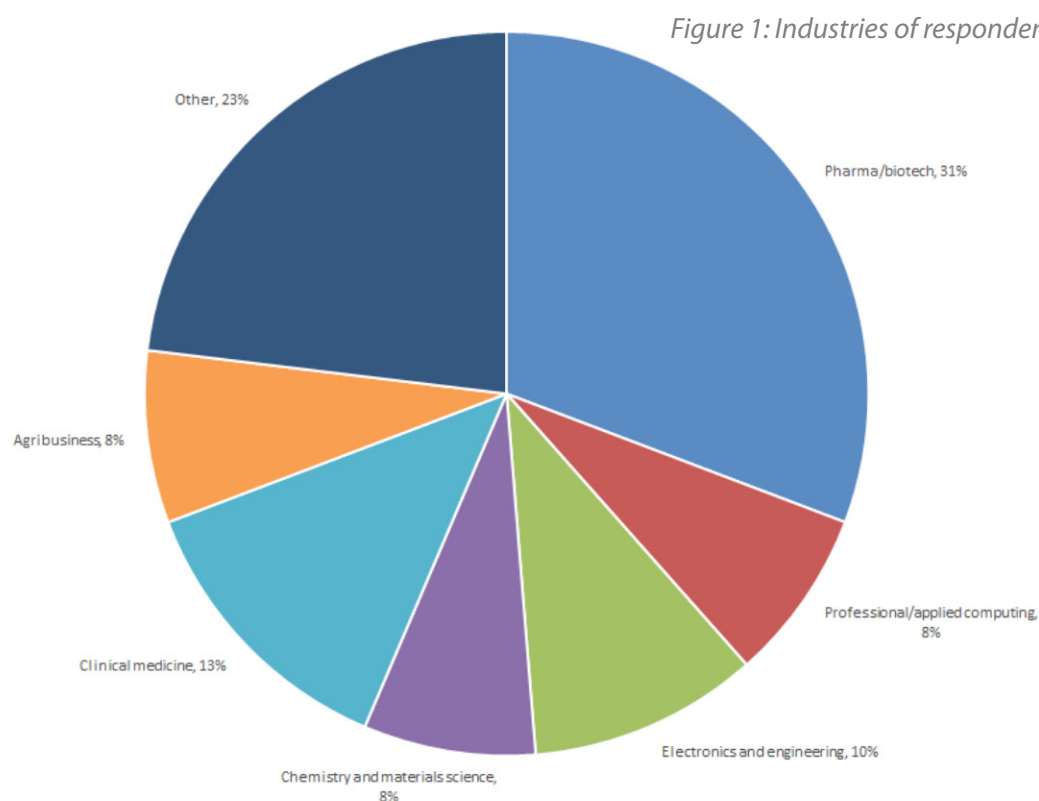
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Survey demographics

For the 2019 survey, the target audience of science-based research organisations was similar to that in 2018. This year, we captured inputs from 39 organisations.

To understand their range of resources, we asked respondents, "What is the primary subject focus of your content collection?" and required respondents to select only one. Figure 1 shows the results.

Figure 1: Industries of respondents

Other, 23%
Pharma/biotech, 31%
Agribusiness, 8%
Clinical medicine, 13%
Professional/applied computing, 8%
Electronics and engineering, 10%
Chemistry and materials science, 8%

Part 1 - introduction

Under "other", respondents could add a different area of focus if relevant. Several respondents flagged up that multiple industry sectors are represented in their organisations:

- "We are really split three ways with pharma, chemistry, and clinical medicine"

- "Manufacturing, computing, applied computing, electronics, engineering, chemistry, materials science, mathematics, statistics, environment, climate, and other sciences".

As in the similar survey conducted in 2018, we asked respondents to share some details of their organisation, encompassing staffing levels in their information research centre or equivalent department, set against the organisation's total headcount.

Our respondents reported a low of 1 FTE and a high of 30 FTEs in their information teams, with an average of 9 FTEs.

They reported their target markets as ranging from a low of 40 people to a high of 70,000, with an average of 10,271.

A calculation that Jinfo developed as part of our benchmarking work (see "Benchmark information services - progressing towards transformation" for more information) is the number of FTEs in an information centre for every 1,000 people in their target market. This enables us to develop a sense of the capacity an information team has, compared with the number of people they are trying to serve.

Table 2 compares the average FTEs per 1,000 of the target market from this project against Jinfo's current benchmarking data.

Table 2: Average FTEs

	Average FTEs	Average FTEs per 000s of target market
This project	9	5.2
Jinfo benchmarking data	8	4.83

⬇ Continue to part 2 ⬇

Part 2 - foundation - definitions and desires

The aims of the "Jinfo survey - adopting technology for discovery" are to:

- Identify which themes from 2018 are still current and relevant for information professionals across different industry sectors

- How information professionals are engaging with new technologies, and what opportunities and challenges exist for skills development and implementation

- What business problems these technologies are being directed to resolve, and whether information professionals have wish-list items that are still waiting to be addressed.

And, as noted previously, the 2018 survey report identified and then examined three key goals for content discovery:

- Creation of a single point of entry to a diverse content collection

- Improvement of back-end integration of multiple databases

- Generation of fresh insights through the use of data analytics.

Definitions of discovery

Before diving into a discussion of "discovery", which can be challenging to define, we started the survey by asking respondents to name "typical technology-related projects that your department addresses". Despite the difficulty of analysing open-ended responses, we felt this was the best way to build context for the activities information teams are being asked to undertake.

From these responses, we could then categorise some things as "discovery"-related projects, according to the three goals identified, even if not described as such explicitly.

There is a broad selection of typical technology-related projects identified by our respondents; perhaps unsurprisingly, a significant proportion (65% of responses) can be seen as projects relating to all aspects of content management and discovery, both internal and external. Some of the activities they mentioned include:

- "Replacement or updates of existing systems"

- "Creating and updating databases; content access and integration"

- "Knowledge capture, enterprise search, collaboration processes and tools, taxonomy"

- "Federated search, AI projects, machine learning, text and data mining, visualization"

- "Vendor identification, trends, best practices".

Others mentioned projects that are more aligned with IT:

- "Data repository, connecting publications back to personnel records"

- "Cyber-security, user authentication, storage, AWS (Amazon Web Services) and AWS-like systems, usage monitoring".

Part 2 - foundation - definitions and desires

Several entries relate to projects in the wider organisation, which may be indicating that information professionals are either enabling access to content for specific interest groups (for example, those working with electronic medical records, or health economics and outcomes research professionals):

- "Cause-effect; mechanisms of action; disease states; clinical trials; HEOR (health economics and outcomes research) evidence grids; authentication; SSO (single sign-on); mobility"

- "Access, discovery (federated searching, embedded content in the electronic medical record)

- "Embedding clinical tools into an electronic medical record"

- "We, theoretically, cover innovation through post-marketing ... looking at AI/machine learning for early innovation".

We also gathered information on how these projects tend to get addressed by the respondents' departments. The fact that 57% of respondents confirmed that designated members of the team have this responsibility as part of their jobs shows that there is a reasonable level of capability within some information departments to deal with these activities. Another 34% say there is reliance on everyone pitching in based on their availability, skillset and interest. Only 9% say that projects are handed over to other groups, such as IT or automation groups.

Future plans and wish lists

Figure 2 shows the respondents' level of interest in the following topics. We asked if the topics were of "current interest," "past interest," or "not an interest" and included a choice to indicate other technologies of interest and the level of urgency:

- User authentication systems

- Usage monitoring/reporting

- Federated search

- Machine learning

- Auto-summarisation

- Text and data mining

- What other technologies are current interests? Please indicate urgent or non-urgent.

While a majority of respondents say that both user-authentication systems and usage monitoring/reporting are of current interest (76% and 94% respectively), there is a pretty even split between whether they are urgent (authentication, 50%; usage monitoring, 53%) or non-urgent priorities. Perhaps this reflects the fact that while both areas are of long-standing importance, and critical to seamless user access and in demonstrating return on investment respectively, urgency may not translate into capacity to complete the required actions. Very low numbers of respondents identified these areas as future priorities.

Part 2 - foundation - definitions and desires

Figure 2 shows the responses to this question. Topics identified as being of greater interest in the future include machine learning, auto-summarisation, and text and data mining, although all are seen currently by a majority of respondents as non-urgent.
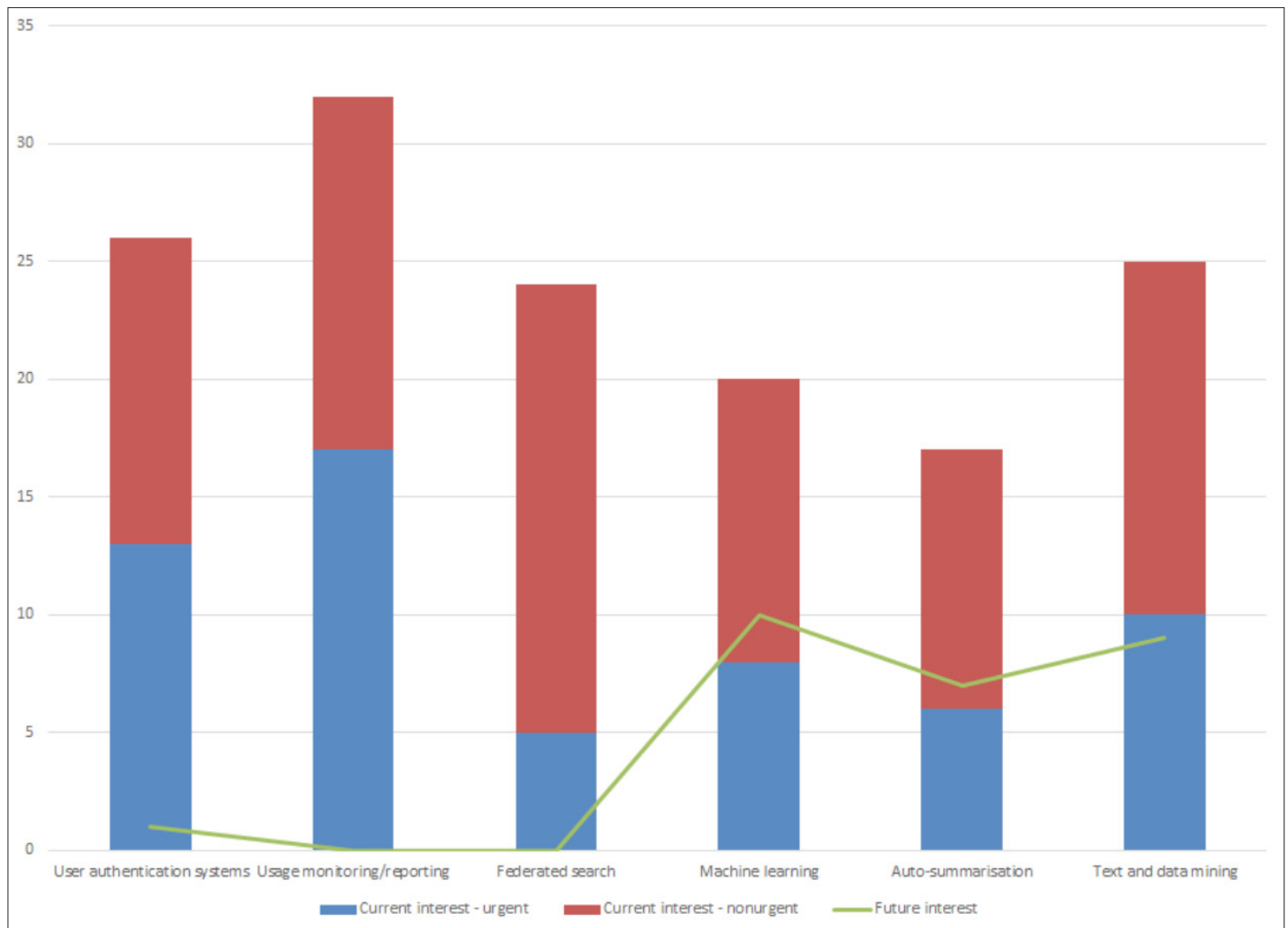

Figure 2: Areas of interest

In addition, people responded with details of additional technologies of current interest, including:

- "Automation of document creation, such as standard letters"
- "Knowledge graphs and evidence grids"
- "AI tools to deal with enquiries".

More urgent topics were identified as:

- "Chatbots"
- "Useful permissions clearances software"
- "Searchable fields on company-specific equipment".

Part 2 - foundation - definitions and desires

Looking to the future, we asked respondents to identify one thing they would change with regard to three areas:

- Resources

- Skills

- Environment for technology.

Grouping comments according to these three broad areas, we find that ease of access by the integration of multiple resources through single sign-on is a prominent theme, with a desire for vendors to enable this integration or to relax licence restrictions to make the end-user experience simpler and less confusing.

Examples of the resources wish list include:

- "Ability for users to access our suite of resources without a firewall"

- "Faster integration of resources between vendors so there is not only a single-sign-on application but also a single go-to source, customised to fit our info needs"

- "Better usability and smooth path through authentication and access to resources; today there are too many ways to get to stuff and it is confusing for clients"

- "Easier access to online resources - currently limited by licence restrictions".

Taking the topic of resources to include both time and budget (to fund the purchase of content and recruitment of staff), people also desire:

- "Budget, we need more to actually invest in technology not just "investigate""

- "Resources to invest in software to build out the KM infrastructure, specifically a taxonomy management tool, such as Data Harmony or Smartlogic, and tools to support the delivery of knowledge in the flow of work, such as Auros from Emergent Systems"

- "Besides more money? Time to do research/testing/investigation into new tools/techniques"

- "Time and skills to develop a more integrated and useful web presence that connects users with the correct resources"

- "Funding to hire skilled staff and purchase more tools and resources".

People also identified that requirements for change include bringing in relevant skill sets - from traditional library skills to coding and analytics:

- "Have a dedicated IT person on the team. Currently, we rely on corporate IT when we need hardcore specialists and it takes forever to get help"

- "Wish we had a dedicated technology resource rather than the ad hoc arrangement in place now"

- "Be more integrated with the IT group within the company"

- "Developing (or hiring for) IT skills needed to support our information resource portfolio

Part 2 - foundation - definitions and desires

- "More people with knowledge in all three aspects: subject-content, library information science, coding expertise".

Other desired changes are grouped under the general topic of the environment; the comments reveal common themes - to gain a better understanding of customer needs, to improve customer experiences, to challenge the status quo:

- "Helping internal customers articulate true business case(s)"

- "Better knowledge of options/overall plan. I feel like the guy coming into the landscaping job with a backhoe and some pavers and plants… and no landscaping design"

- "Getting the basics right, they are the thing that most often lets us down"

- "Culture change management"

- "Breaking traditional service orientation to include curiosity, new tech exploration".

One respondent voices a heartfelt plea to vendors to improve their ways of working:

- "The biggest problem I see today is with vendors' inability to think clearly, analyse situations thoughtfully and provide clear solutions. After receipt of enough data files that make no sense, or messages that have such egregious typos that they say the exact opposite of what was intended, I escalate to VPs and to global managers and they actually tell me the rep was probably just too busy to be more careful and responsive."

<div style="text-align: center; border: 1px solid #ccc; padding: 1em;">⬇ Continue to part 3 ⬇</div>

Part 3 - keeping up with technology

Through the "Jinfo survey - adopting technology for discovery", we wanted to gather some details of how respondents are keeping up to date with technology developments and what gaps need to be filled for professional learning now and in the future.

We asked respondents to indicate how they keep up to date with technology. They could select as many methods as were relevant to them from the following list:

- Ongoing awareness through professional reading and networks

- In-depth research when I suspect a need is coming up

- In-depth research, starting when a need arises

- Updates from technology vendors and suppliers

- Updates from internal teams working on technology projects

- Attending conferences

- Attending webinars

- Pursuing further education (such as coursework or certifications)

- Other (please specify).

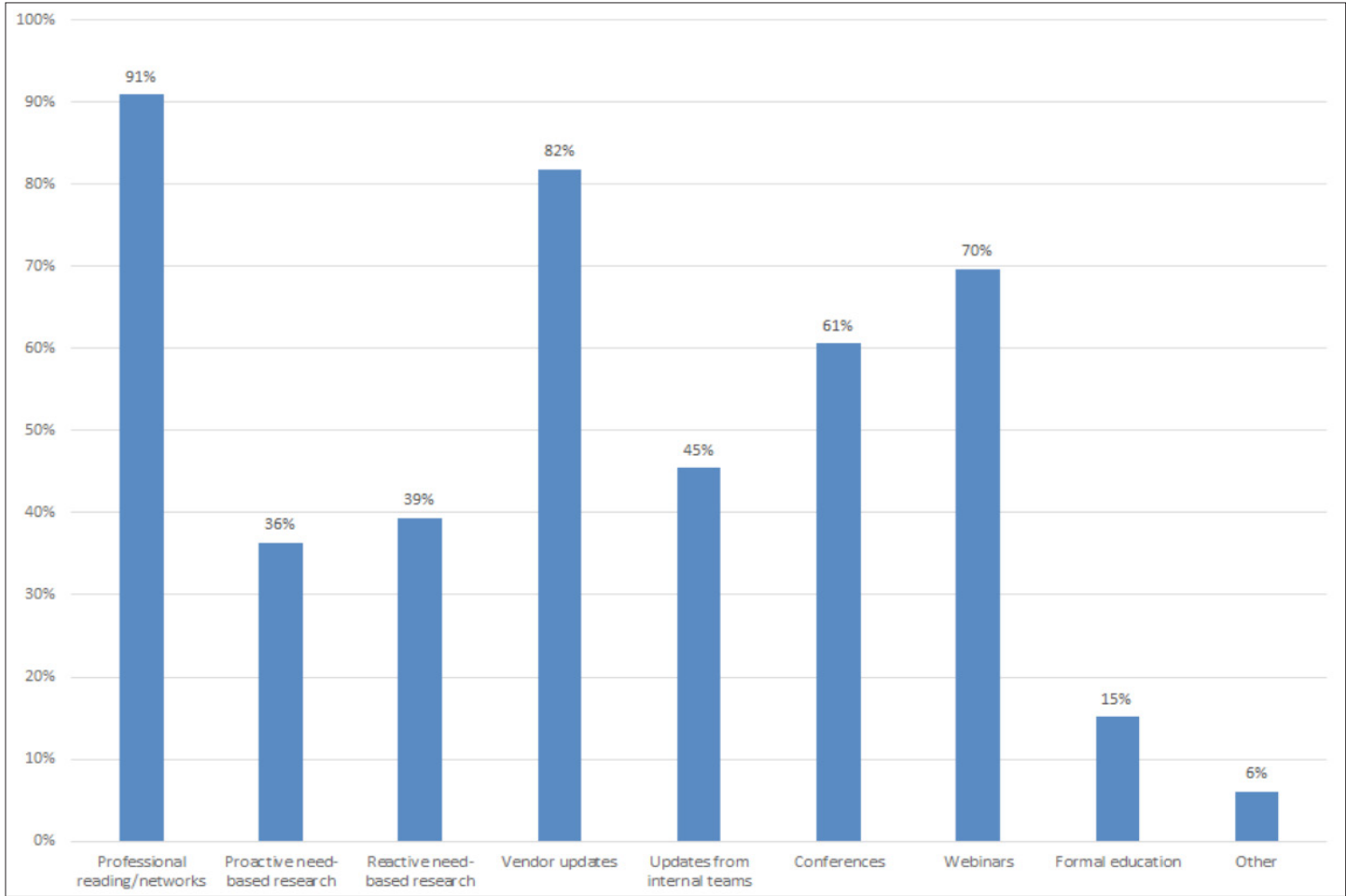Figure 3 shows the percentage of respondents selecting each of these methods.

Figure 3: How do you keep up with technology?

Part 3 - keeping up with technology

The primary method was the use of professional reading and networks, selected by more than 90% of respondents, followed closely by relying on updates from technology vendors and suppliers at 82% and accessing webinars at 70%.

Attending conferences was chosen by 61%. Other less-frequently chosen options were relying on the internal technology project team for updates at 45%, only engaging in in-depth research when a forthcoming need is anticipated at 39%, or when the need arises at 36%.

Infrequently, respondents will call on formal education options (15%), whilst a couple of individuals gave examples of other methods of attendance at local lectures or the individual using their professional network for input or direction.

Respondents were asked to reflect on a series of statements relating to how they feel their teams are enabled through internal support/time/funding and sources of professional development to achieve the goal of staying up to date with technology.

They could rate each of these statements from 1 = "completely disagree" to 4 = "completely agree":

- My team has the time we need to stay up to date on technology

- My team has appropriate internal support for improving our knowledge about technology

- My team has appropriate funding to stay up to date on technology

- We are confident that we are pursuing knowledge about the most relevant technologies for our organisation's needs and goals

- Vendors and suppliers are a good source of professional development on technology

- Professional associations are a good source of professional development in technology.

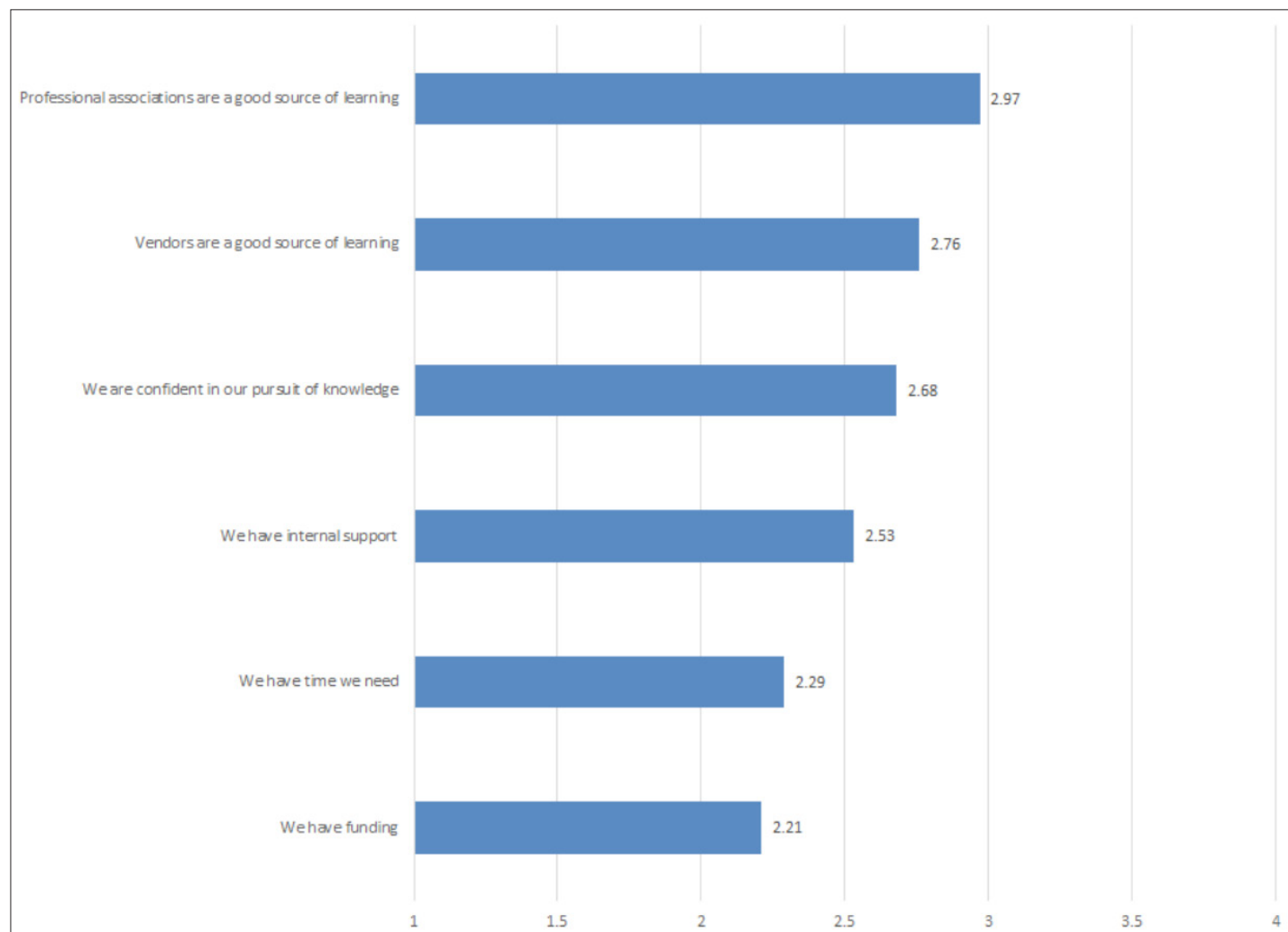# Part 3 - keeping up with technology

Figure 4 shows the average ratings.

Figure 4: Rate your agreement with the following statements

An average of 2.5 on the 4-point scale is the half-way mark; averages over that mid-point are statements respondents generally agree with, whilst averages below that point indicate that respondents generally disagree with the statement.

At the high end of the scale, respondents are reasonably positive about professional associations (2.97 on the 4-point scale) and vendors (2.76 on the 4-point scale) as sources of insight and knowledge on technology.

A couple of respondents, however, noted:

- "Vendors obviously have a bias, and are looking at stand-alone technologies rather than [what is] broadly applicable"

- "[There is] never enough time or money; [I] wish professional associations were more cutting edge, vendors can be (but aren't always) cutting edge."

Part 3 - keeping up with technology

Respondents are pretty confident in their pursuit of knowledge in this area (average rating of 2.68). They provided a range of details relating to sessions, programmes and skills development which they had used in the 12 months prior to the survey; some took the opportunity to identify general sessions:

- "Attending industry groups, supplier and industry-body webinars on various topics and tools"

- "Inviting vendors to demo"

- "Free webinars, articles, internal demos, vendor visits"

- "Attending conferences and user group meetings"

- "Social media postings".

Others provided more specific details of conferences attended or training programmes undertaken. Many have also helpfully cited specific training and workshops to guide others to learning opportunities relevant to many in information professional roles (where possible, we have included relevant URLs for readers):

- P-D-R

- Pistoia Alliance programmes

- MLA conference

- RA21 webinar from NNLM

- Bio-IT World

- SLA

- PIUG

- ITIMG

- APQC

- ISPOR

- CCC Industry Forum

- Scrum training (for example, https://www.scrum.org/courses)

- Python course (for example, https://www.python.org/)

- Six Sigma Black Belt certification (for example, https://www.sixsigma-institute.org/)

- OpenAthens webinars

- The challenges of preserving and sharing social media research data

- Deep dive into COUNTER Code of Practice Release 5

- Best practices for data sharing and deposit for librarian authors

- Data ethics is good business (for example, https://www.oreilly.com/live-training/courses/spotlight-on-learning-from-failure-data-ethics-is-good-business-with-heather-krause/0636920258056/)

- How to make open access work for everyone: closing the information inequity gap.

Part 3 - keeping up with technology

These examples illustrate the range and different levels of skills development and awareness-raising in which our respondents are active participants; different industry sectors and interest groups are represented by the conferences highlighted, from Bio-IT World to the SLA, for example.

Looking ahead, the list of sessions, programmes or topics of interest for the next 12 months is equally diverse. Several respondents refer back to the listings above, and many general and "hot" topics are highlighted:

- "Machine learning; combining internal and external search (proprietary vs public); knowledge/search"

- "Internal/external repository searching with a focus on chemical data"

- "Augmented intelligence, natural language processing, ontologies"

- "Auto-summation"

- "Internal search, TDM [text and data mining], Open Access read and publish licensing"

- "Taxonomy and ontology as services"

- "Data preservation and retrieval"

- "Digital transformation in libraries".

These examples demonstrate an interest in continuing to acquire knowledge and understanding of emerging fields, such as augmented intelligence, as well as existing but still developing areas, such as machine learning; a number of comments also identify the need to grasp the deeper consequences of the introduction of new technologies:

- "Change management for technology use/understanding (library + customers)"

- "Financial impact of new technologies".

One person commented:

- "Would love to see more info on how all the pieces work together. I'm a solo librarian in a hospital with a supportive IT department, but I need to go to them with more than, "So there's this access stuff that's changing. Oh, and people need better ways to find stuff." What pieces am I missing? What are the options for each of the pieces? Time is an issue; both not enough time to research, as well as time growing shorter to implement some of these solutions."

Very few respondents identified specific resources for which they needed to gain knowledge, rather citing broad interests, while others acknowledged that it would depend on what might be changing in their environment and what new tools and tactics are going to emerge.

Over two-thirds (68%) of respondents disagreed with the statement that "my team has the time we need to stay up to date on technology", and an even higher proportion (71%) disagreed that "my team has appropriate funding to stay up to date on technology."

This may not be a new situation - time and funding are often constrained - but it might indicate a perceived threat to how well-informed people feel as the pace and breadth of technological development inevitably increase.

Part 3 - keeping up with technology

Therefore, there may be a need to look at how to enable teams to free up time and prioritise limited budgets towards critical skills development.

However, respondents did agree that appropriate internal support for improving their knowledge about technology was available (56%), although one respondent remarks that:

- "The focus of our staff time is unlikely to ever be on technology development. It is a thing we sort of pick up ad hoc as we are interested in it. It's not really in any of our job descriptions though."

Our survey respondents were forthcoming in sharing their techniques for keeping up to date with technology.

They clearly express the challenges of juggling the "day job" against carving out time to devote to emerging areas. Despite the time and budget limitations, many feel supported by their organisations to make this investment in the future.

Continue to part 4

Part 4 - single point of entry/back-end integration

As was identified in our 2018 survey report, a key goal of "discovery" is to create a single point of entry for users (rated as essential or very important by 84% of 2018 respondents), as well as some level of back-end integration of databases (72% said "essential" or "very important" in 2018).

For the 2019 "Jinfo survey - adopting technology for discovery", we combined these two goals into a single problem to be solved. Namely, how to make it easier for users to access all relevant resources through a single interface by breaking down siloes between sources.

We asked respondents how important this goal was to them and their organisations by rating it on a scale of 1 to 10, where 1 = not important and 10 = essential; 88.2% of survey respondents rated this goal a 7 or higher on the 10-point scale.

For those respondents for whom this was an important goal, we asked: "What user groups, if any, do you prioritise for improving discovery through a single point of entry or back-end integration? In other words, who is in most need of this type of discovery solution?"

Most respondents identified groups of users, from scientists and engineers through to market researchers and senior executives. One respondent noted:

- "My clients are product developers, who need one place to look for engineering literature instead of serially searching myriad databases."

Others echoed:

- "All of our knowledge workers, which is 95% of our employee base, need a single point of entry to speed up and enhance their research. They do not need to spend their time hunting for info, but could better use the time analysing it"

- "In my contacts with end-users, scientists tend to be willing to find additional resources through references and bibliographies. Engineers tend to want to see the search results immediately; if not, they tend to re-do the problem on their own."

Rather than focusing purely on specific groups, one-third of the comments reference "all end-users". Another respondent describes the need to come up with internal solutions to back-end integration while highlighting both the external and internal issues that arise:

- "This has been a goal, by the way, for my entire career. Vendors don't cooperate so we've turned to internal systems. It's eye-opening to realize that other departments have no idea how to index or why meta-tagging matters. Imagine how that impacts homegrown discovery tools."

Another articulates the problem that both technological approaches aim to resolve:

- "People don't always know what they want or need, underestimate their own skills and effectiveness in acquiring, don't know what they don't know."

Part 4 - single point of entry/back-end integration

We then asked respondents to rate their agreement with a series of statements using the 1 to 4 scale about their current environment for addressing this goal:

- Available technology and tools give our users the precision they need to discover the right content

- Available technology and tools offer user-friendly interfaces

- Solution vendors understand our needs and priorities

- We are able to secure appropriate budget and resources to meet this need

- Our content vendors are effective partners in meeting this need.

Figure 5 shows average ratings for these statements.
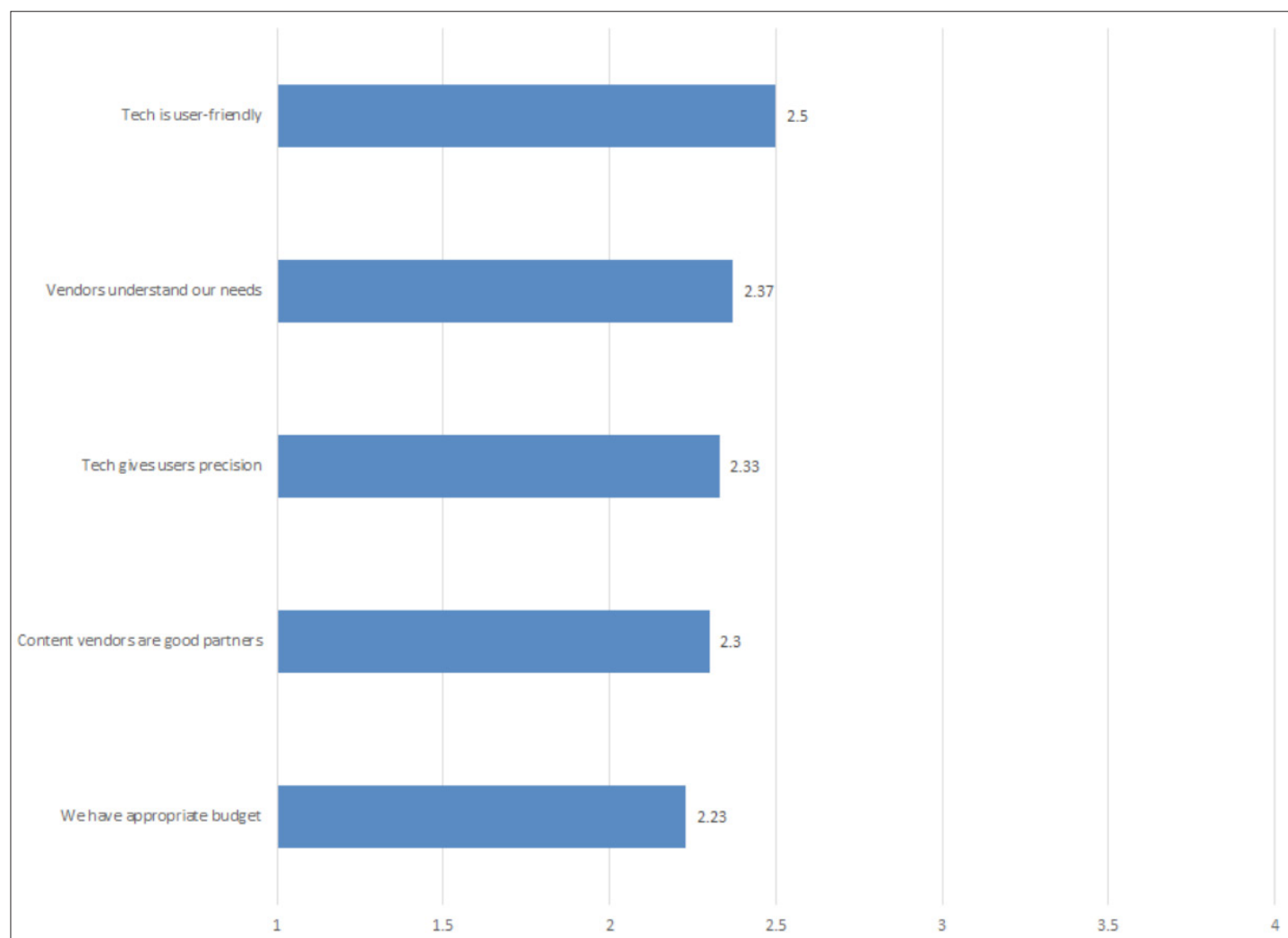
Figure 5: Rate your agreement with the following statements

Keeping in mind that 2.5 is the half-way mark on the 4-point scale, respondents are fairly negative about their current environment. The highest average rating is for the statement "Available technology and tools offer user-friendly interfaces," but this statement only garners an average rating of 2.5 - right at the neutral point.

Part 4 - single point of entry/back-end integration

The remainder of the statements all earn average ratings below that point. Respondents have the greatest disagreements with the statements, "We are able to secure appropriate budget and resources to meet this need" (2.23) and "Our content vendors are effective partners in meeting this need" (2.3).

We also asked respondents to rate their agreements with statements relating to their expected future state:

- We expect to increase significantly our investment of information staff time to meet this goal

- We expect to increase significantly our investment of the overall budget to meet this goal

- We expect to research at least one alternative solution
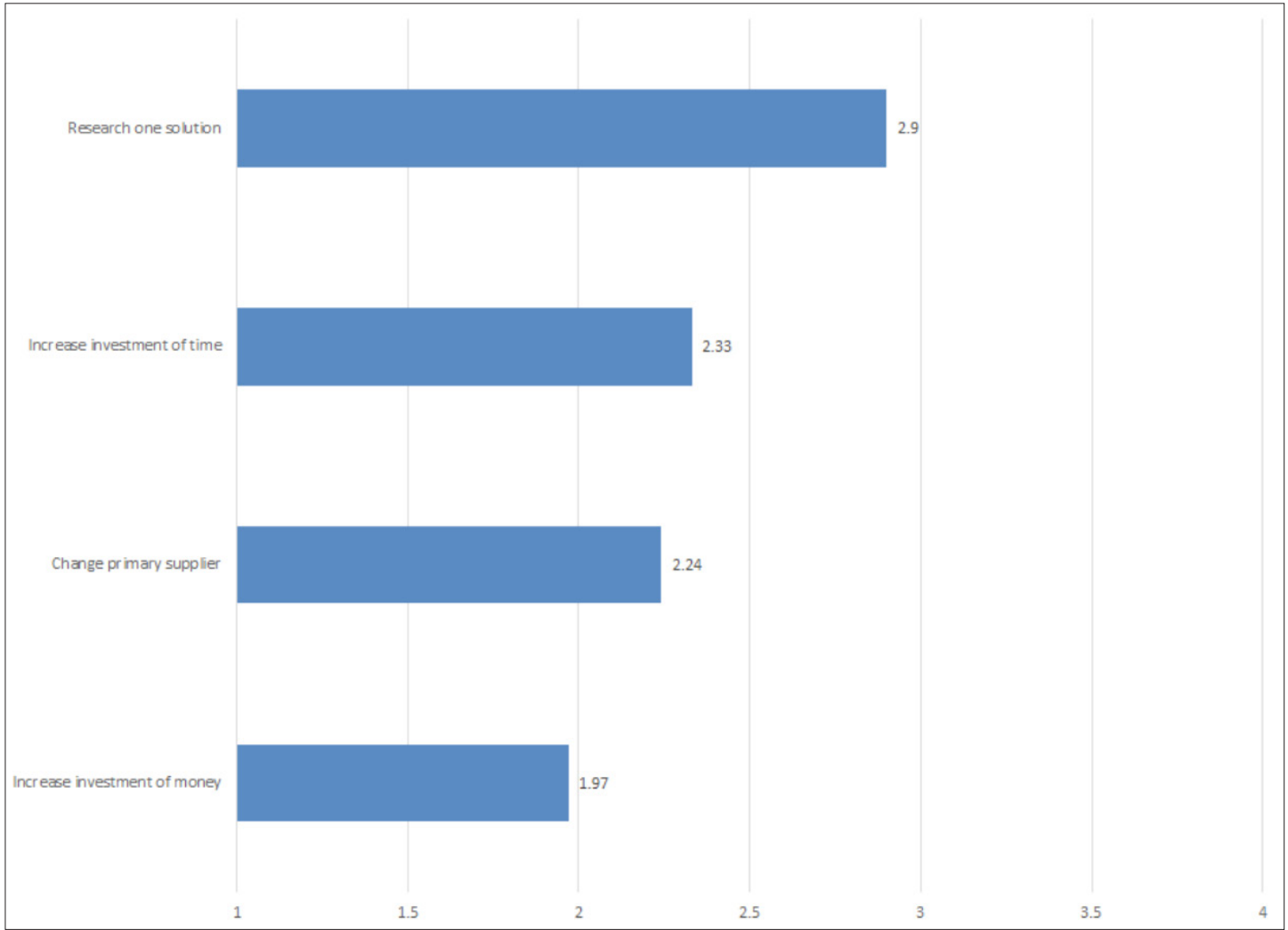
- We expect to change a primary supplier.

Figure 6: Rate your agreement with the following statements

Respondents clearly intend to be researching solutions in the next 12 months (average agreement rating of 2.9 on the 4-point scale for that statement) but are unlikely to increase the time (average of 2.33) or change a primary supplier (2.24), and they are certainly not planning to increase financial investments (1.97).

Part 4 - single point of entry/back-end integration

Which solutions?

We asked respondents to name or describe the products, technologies or platforms they have used to provide a single point of entry and/or back-end integration of databases. We asked what they currently use, what they used in the past, and what they plan to look at in the future. The responses varied.

Some responded generally, noting that they had used "end-user layers that improve user experience" and federated search in the past but gave no specific details.

A wide range of products, technologies, and platforms were named as being in current usage, such as:

- BizInt

- IEEE

- Scopus

- OCLC WorldCat Discovery

- Newscycle (now Naviga)

- Soutron library catalogue

- Auto-Graphics

- Sinequa

- ONTOFORCE

- Ovid discovery

- The Summon Service

- Intota

- EBSCO Discovery Service.

This list is starting to show the dominance of integrated discovery services, although one respondent comments:

- "My impression of the current discovery technology is that they are still not mature yet. With a limited overall budget, I would rather spend on the actual content (journal subscriptions, backfiles, ebooks) than a not-very-satisfactory technology."

Other general comments importantly identify the core issues rather than just the specific technologies employed:

- "What I really want is more 'just in time' information – and how to deliver that"

- "I think the goal is to present actionable information to increase the speed of knowledge/decision-making– I think that the goal of backend & single point is really a how-to-achieve faster/better-informed decision-making".

 Continue to part 5

Part 5 - fresh insights through smart technology

The final goal of "discovery" identified in our 2018 research is to apply smart technologies (AI or text and data mining) to surface insights that would otherwise be invisible.

For the 2019 "Jinfo survey - adopting technology for discovery", we asked survey respondents to rate the importance of this goal to them, using a scale of 1-10 where 1 is "not important" and 10 is "essential. Some 53% of respondents reported the importance of this goal as a 7 or higher on the 10-point scale.

For those who indicated that this goal was important, we asked a number of additional questions, starting with:

"Which content collections or databases, if any, do you prioritise for generating fresh insights through smart technology?"

Some respondents provided specific names:

- Best Practices
- BIOSYS
- Cortellis Clinical Trials
- Decision Resources Group (DRG)
- Embase
- Forrester
- Gartner
- Nature Research journals
- PharmaPendium
- PubMed
- SBIR Awards
- Trialtrove
- Web of Science.

Others named general types of sources:

- Core clinical for medicine and nursing
- Content aggregation and media sources
- Mixture of internal and external
- Full-text platforms
- Clinical trial data
- Biomedical literature
- Conference abstracts
- Internal knowledge database
- ebooks in astronomy, computer science, environmental science and engineering
- Industry reports
- Regional government information.

Part 5 - fresh insights through smart technology

We then asked respondents to rate their agreement with a series of statements about their current experience of creating AI-supported discovery environments. Respondents could rate these statements from 1 = completely disagree to 4 = completely agree:

- Available technology and tools meet our expectations for surfacing fresh insights

- Available technology and tools offer user-friendly interfaces for most end-users

- Available technology and tools offer user-friendly interfaces for the information staff and power-users

- Our information team has a clear vision of what we are trying to achieve

- Solutions vendors understand our needs and priorities

- We are able to secure appropriate budget and resources to meet this need

- Our content/data providers are effective partners in meeting this need.

Figure 7 shows the averages of their ratings.

Figure 7: Rate your agreement with the following statements
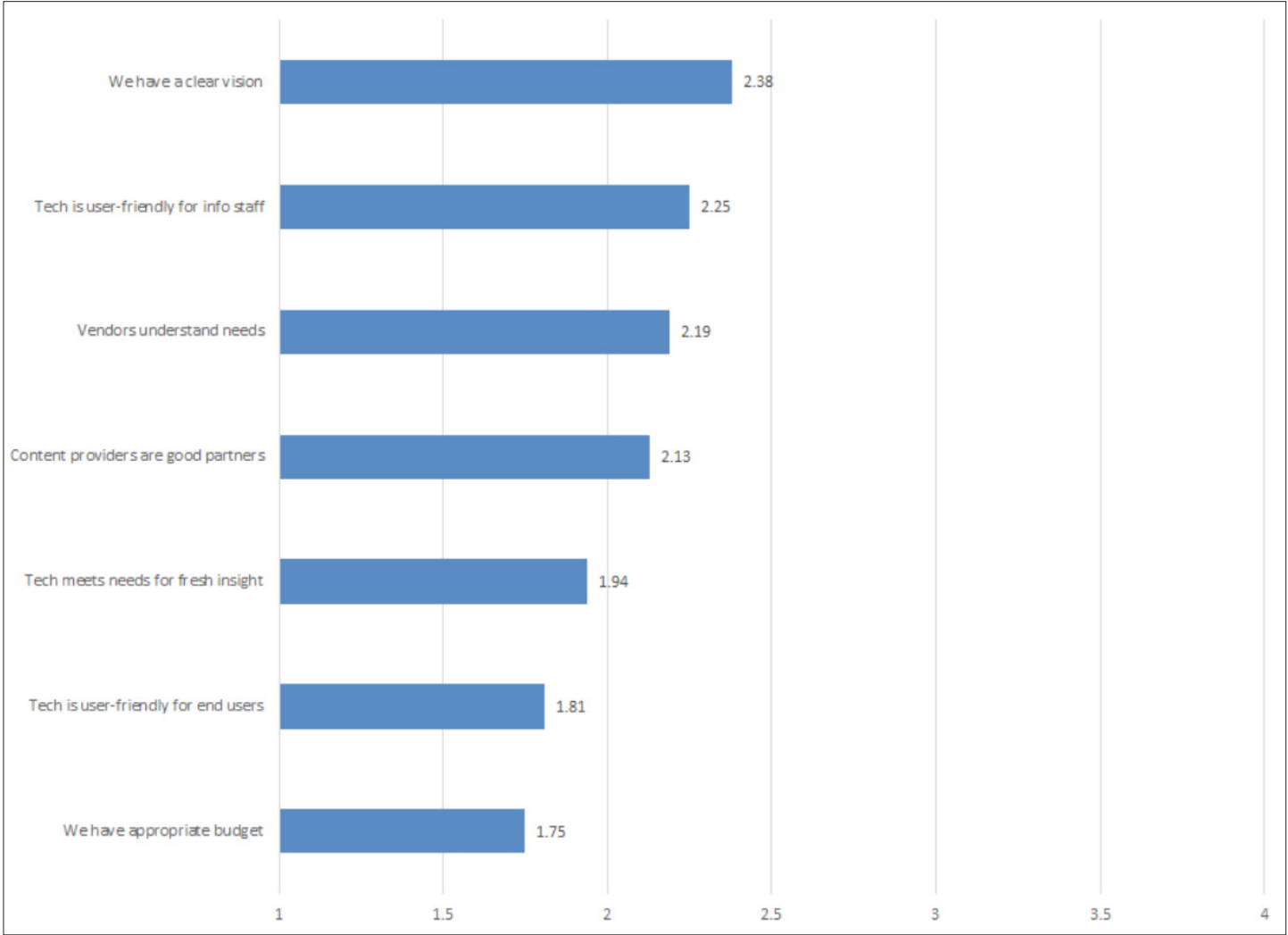
Part 5 - fresh insights through smart technology

These averages show that respondents feel pretty negative about their current options and environments. All of the statements fall below the halfway mark of 2.5 on the 4-point scale. At the high end of the scale is the statement, "Our information team has a clear vision of what we are trying to achieve", which only earned an average rating of 2.38 on the 4-point scale.

This data point strongly reflects the frustration that we at Jinfo hear from so many of our customers - they are not yet sure what the technology can do, what it *should* be used for, or what the expectations of their stakeholders might be.

Average ratings for the understanding and partnership of suppliers are in the middle of the pack, but still on the negative side. "Solutions vendors understand our needs and priorities" earned an average rating of 2.19, whilst "Our content/data providers are effective partners in meeting this need" earned an average rating of 2.13.

Again, these data reflect what we hear in our customer forums and through project work with information managers in a range of industries.

Then we asked respondents to rate their agreements with a series of statements about their expectations for the future in exploring this goal of discovery. These statements were:

- We expect to increase significantly our investment of information staff time to meet this goal

- We expect to increase significantly our investment in the overall budget to meet this goal

- We expect to research at least one alternative solution

- We expect to change a primary supplier.

Part 5 - fresh insights through smart technology

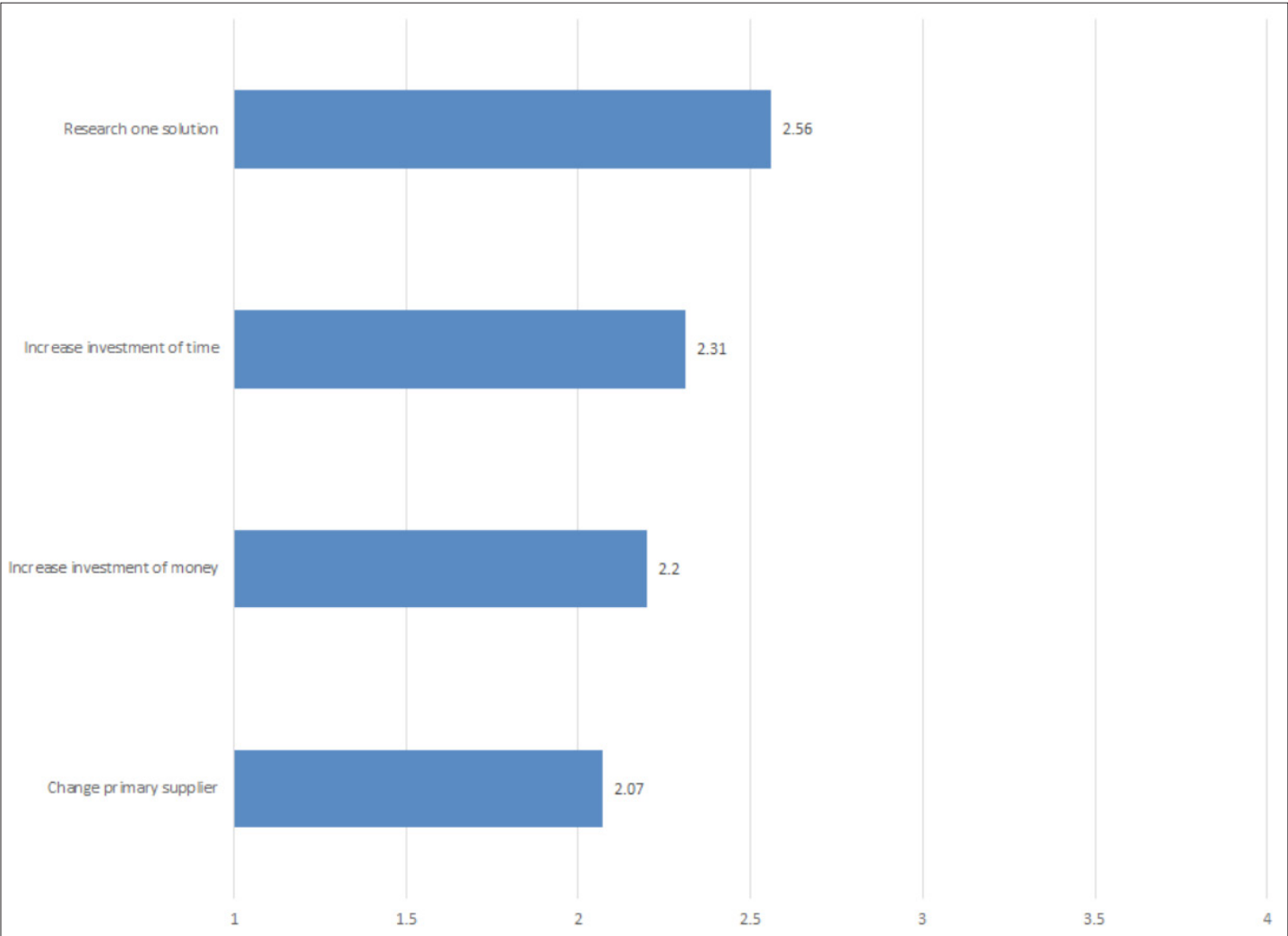Figure 8 shows the average ratings for these statements.

Figure 8: Rate your agreement with the following statements

About the only thing respondents agree with is that they will be researching solutions: average rating of 2.56 on the 4-point scale. They have little expectation of increasing the time or money they spend on developing approaches to meeting the goal of fresh insight through the use of AI and similar technologies, and they do not anticipate changing a primary supplier.

We asked respondents which tools or solutions they have used in the past, currently use, or plan to use in the future. Only one - Zynk - was reported by respondents as having been used in the past but not now.

Tools identified as currently in use include:

- ClinicalKey

- Power BI

- Evid Science

- Derwent Innovation

- Soutron information management.

Part 5 - fresh insights through smart technology

As to the future, respondents are looking at such tools as Linguamatics, Causaly, and Innoplexus.

Developing progress towards both goals

Several of the statements about the current situation and expectations of the future were worded identically for the first goal of creating a single interface/ back-end and the second goal of generating fresh insight through AI.

Comparable statements about the current situation include:

- Vendors and suppliers understand our needs

- We have appropriate budget

- Content vendors are good partners.

Figure 9 compares average agreement ratings for these statements relating to the first goal compared with those relating to the second goal.
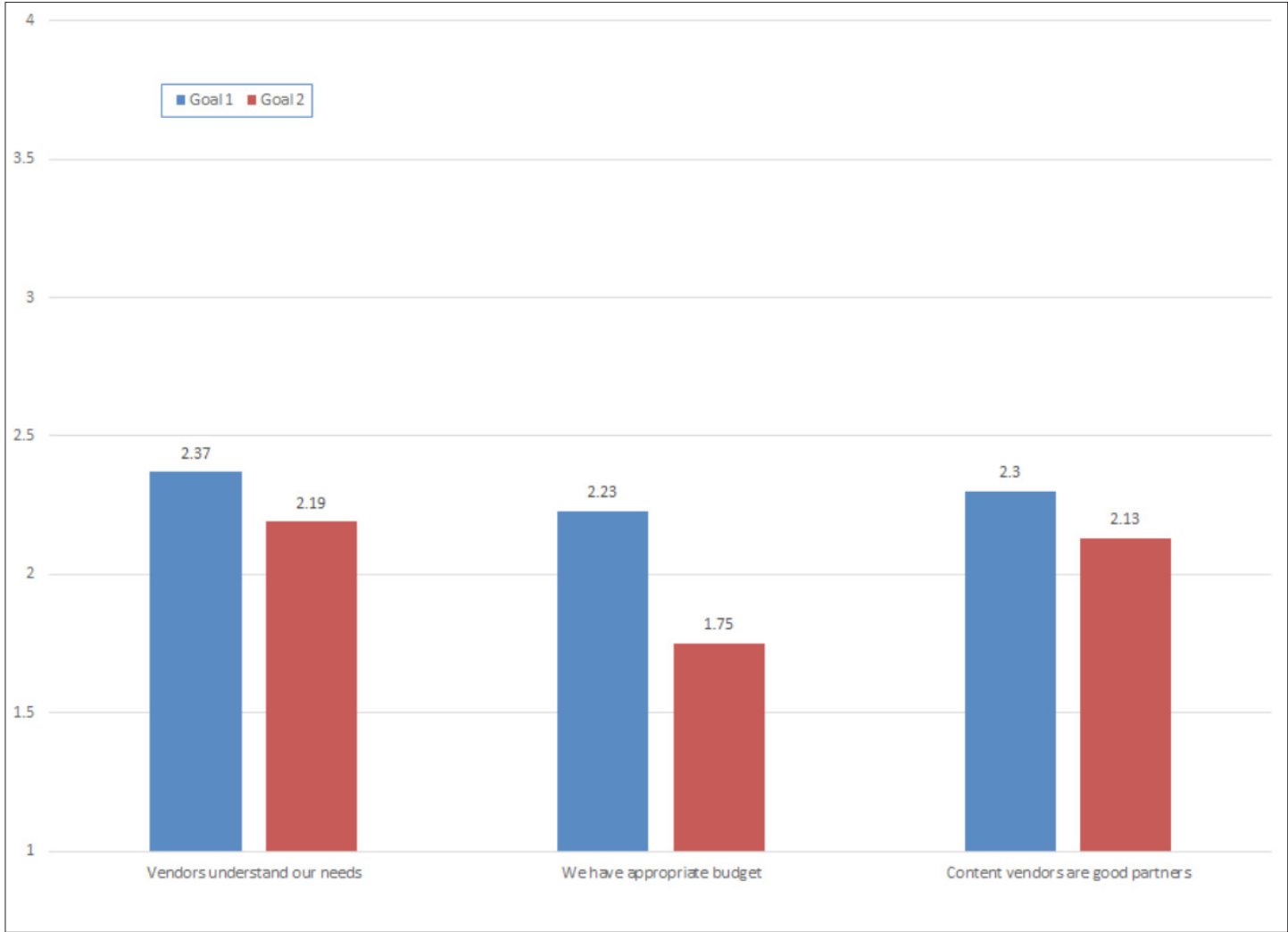

Figure 9: Comparison of agreement ratings on statements about current environment

Part 5 - fresh insights through smart technology

We can see that respondents tend to be more positive about their current situation in addressing the challenge of a single environment/back-end connections than they are about the challenge of creating fresh insights through AI.

However, even with this comparison, we should keep in mind that overall averages are all below the halfway mark of 2.5 on the 4-point scale.

Comparable statements about future expectations include:

- We expect to increase our investment of time

- We expect to increase our investment of money

- We expect to research one new solution

- We expect to change our primary supplier.

Figure 10 compares average agreement ratings for the two goals on these statements.
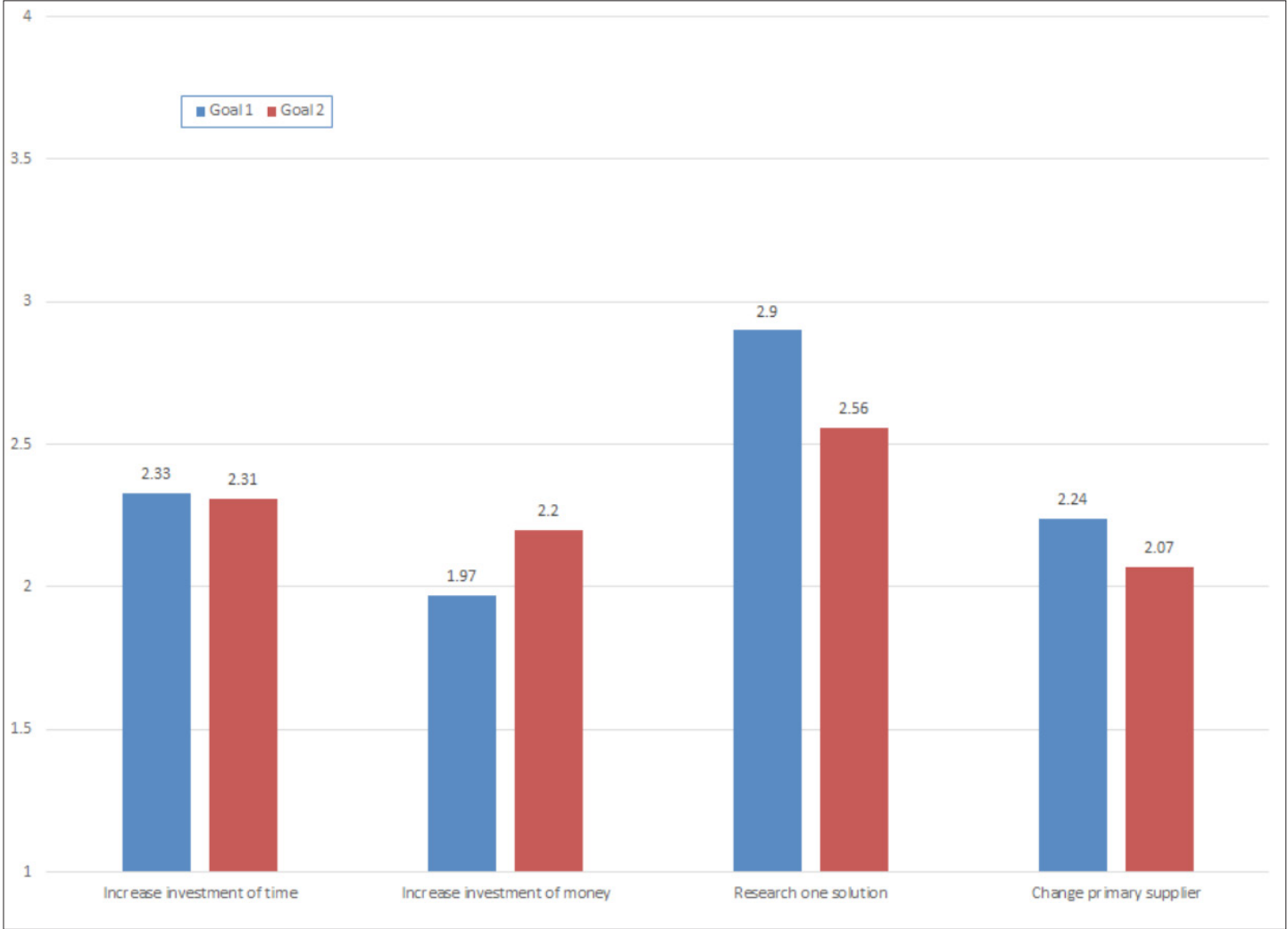
Figure 10: Comparison of agreement ratings on statements about future expectations

Part 5 - fresh insights through smart technology

Respondents are somewhat more likely to research a solution for the first goal than they are for the second. However, they're somewhat more likely (though still overall unlikely) to increase their investment of money in the second goal than they are for the first.

Conclusion

As an industry, we are moving very slowly towards either of the two identified goals of discovery. This is due to a number of factors, including:

- Diversity of needs

- Wide range of tools and solutions at various degrees of maturity

- Lack of clarity within organisations about what's needed or desired

- Misalignment of what vendors and suppliers are doing with what information managers want and need.

But let's not overlook the most immediate barriers to progress: information teams lack the capacity and the funding to dedicate more time and energy to solving these challenges, and they do not expect to get more in the near future.

We can create learning and testing resources, as well as develop new products and solutions; but if organisations fundamentally do not release investment, progress will continue to be slow.

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