NUODB®

BENCHMARKING STRATEGIC TECHNOLOGY INITIATIVES WITHIN SOFTWARE COMPANIES

In November and December 2016, NuoDB surveyed 255 technology professionals about their strategic technology initiatives, the business drivers for those initiatives, and the importance of the database and various database capabilities within those initiatives.

This report analyzes how business drivers, technological requirements, and database usage differ between software providers and enterprises.

> **Our survey included 95 respondents from companies that make either business or consumer software and 167 respondents from other industries.**

INTRODUCTION

Customer expectations are rapidly evolving due to the breakneck speed of innovation. Technology fosters and enables a culture of instant access (and immediate gratification), constant evolution and iteration, subscription pricing models, and targeted efficiencies.

While start-ups often thrive in such an environment because they aren't burdened by the legacy of the past, more established software organizations often need to rethink their culture, their strategy, and their infrastructure to meet customers' elevated expectations. It's no wonder that "digital transformation" has become the buzzword of the day.

We used this survey to understand specifically how software organizations compared to and differed from their enterprise peers in motivations, implementations, timing, and requirements. As a result, our survey included 95 respondents from companies that make either business or consumer software and 167 respondents from other industries. All respondents were from organizations with more than 100 employees.
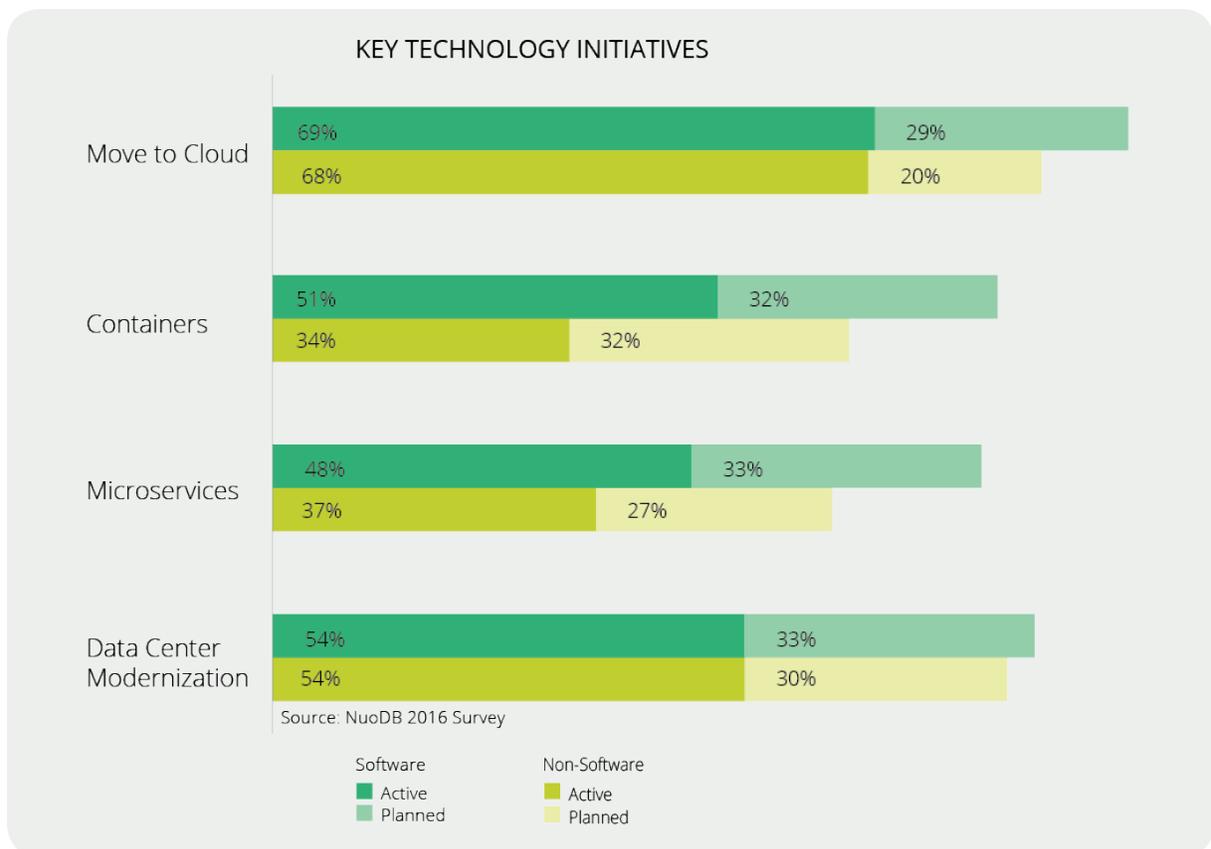
This report summarizes our findings.

ENOUGH PLANNING.
EXECUTION TIME.

We asked specifically about four key technology initiatives: Cloud, Containers (e.g. Docker), Microservices, and Data Center Modernization.

While a preponderance of organizations are moving to the cloud across all industries, software companies appear to view it as a business imperative with just two percent of software companies stating that they do not have near-term plans to move to the cloud. By contrast, 12% of the non-software companies say the same. Despite the active initiatives, however, 46% of software respondents indicated that today they have an all on-premises technology environment; and 56% of non-software companies said the same.

The difference in adoption of strategic technology is even more stark when considering containers and microservices. More than half (51%) of software companies have an active container initiative compared to just a third (34%) of enterprises. Meanwhile, 4 out of 5 (81%) of software companies have either an active or planned microservices initiative compared to just 64% of enterprises.

We're increasingly seeing people move solidly into the execution phase. Across all organizations, more people have "active" initiatives than have "planned" initiatives.

KEY TECHNOLOGY INITIATIVES

	Active	Planned
Move to Cloud (Software)	69%	29%
Move to Cloud (Non-Software)	68%	20%
Containers (Software)	51%	32%
Containers (Non-Software)	34%	32%
Microservices (Software)	48%	33%
Microservices (Non-Software)	37%	27%
Data Center Modernization (Software)	54%	33%
Data Center Modernization (Non-Software)	54%	30%

Source: NuoDB 2016 Survey

Software — Active, Planned
Non-Software — Active, Planned

Digital Transformation Initiatives are top of mind for all organizations, with more organizations in "Active" mode than in "Planning" mode.

3 OUT OF 4
BUSINESS PRODUCT OWNERS

#1 DRIVER
Improving business agility

EMBRACING AGILITY AND TIME TO MARKET.

When asked to rank the nine business drivers against these four initiatives, software and non-software companies alike overwhelmingly identified "business agility" as a top-three initiative (70% for software, 68% for non-software companies). Seventy-five percent of business product owners ranked business agility as the single most important driver for their initiatives.

All companies also agreed on the top-three importance of lowering the total cost of ownership (particularly business product owners, 81% of whom considered it a top 3 initiative compared to 46% of all other roles), but there were drastic differences in what completed the top triumvirate.

Getting products and/or updates to market faster (time to market) was clearly the second most important business driver for software companies, with 62% identifying it as a top-three initiative compared to just 40% of non-software companies.

Conversely, enterprises were far more likely (43%) to identify security and compliance as a top-three driver compared to just 19% of software companies. Interestingly, security and compliance appeared to be a dividing business driver for enterprises in particular. Those who cared about security really, really cared, putting in the top three.
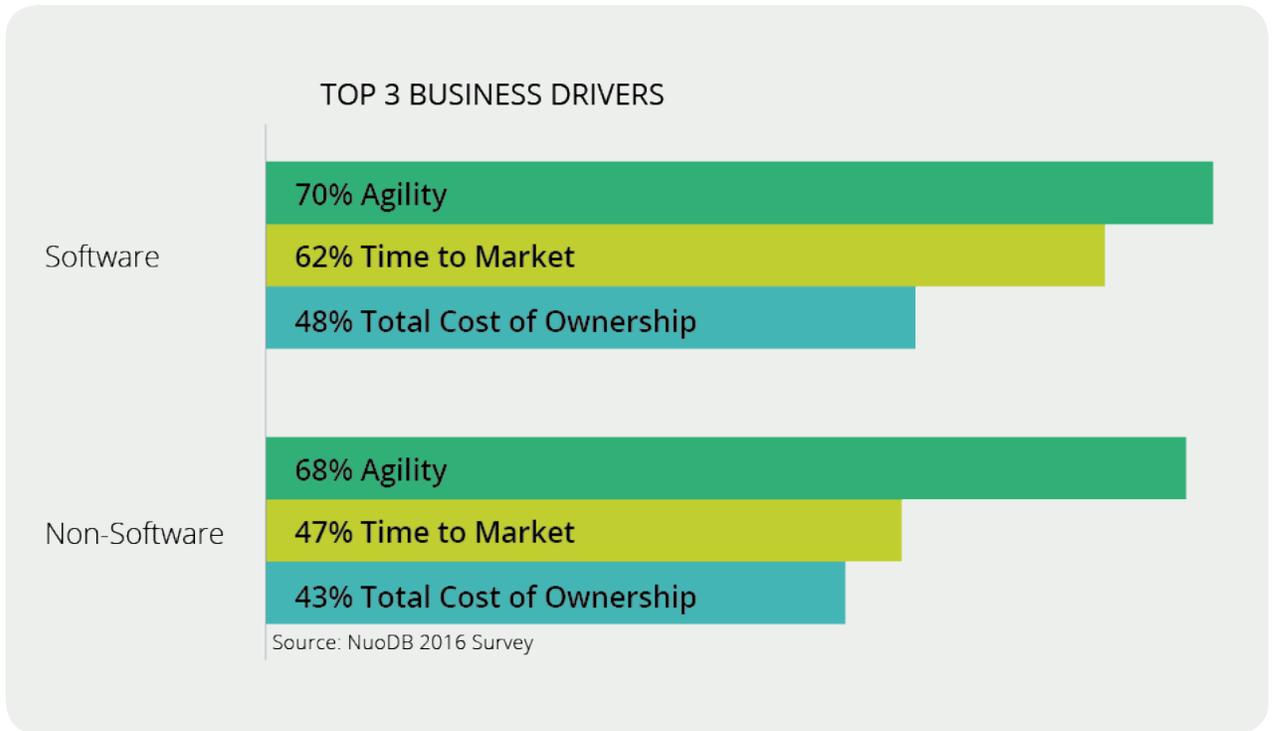
But security and compliance also made enterprise's least important business driver list, with a full third of enterprises (34%) ranked it as either the least important or second least important business driver. Software companies thought even less of security and compliance, with more than half (51%) ranking it as one of the bottom two business drivers.

Interestingly, for all organizations, "business agility" wasn't correlated with either competitive differentiation or driving new revenue, both of which made the list of the three least important business drivers. Architects and technical product owners seemed to care the most, with 1 in 5 (21%) ranking it as a top-three driver compared to just nine percent of all other roles.

THE VALUE OF SECURITY / COMPLIANCE

Enterprise
43%
34%

Software
19%
51%

Source: NuoDB 2016 Survey

■ Top 3 Driver
■ Bottom 3 Driver
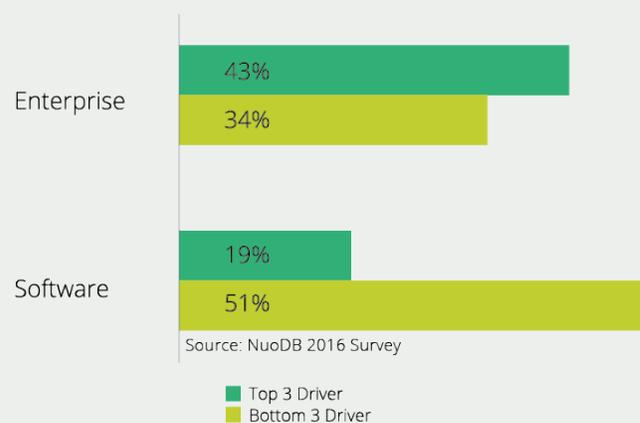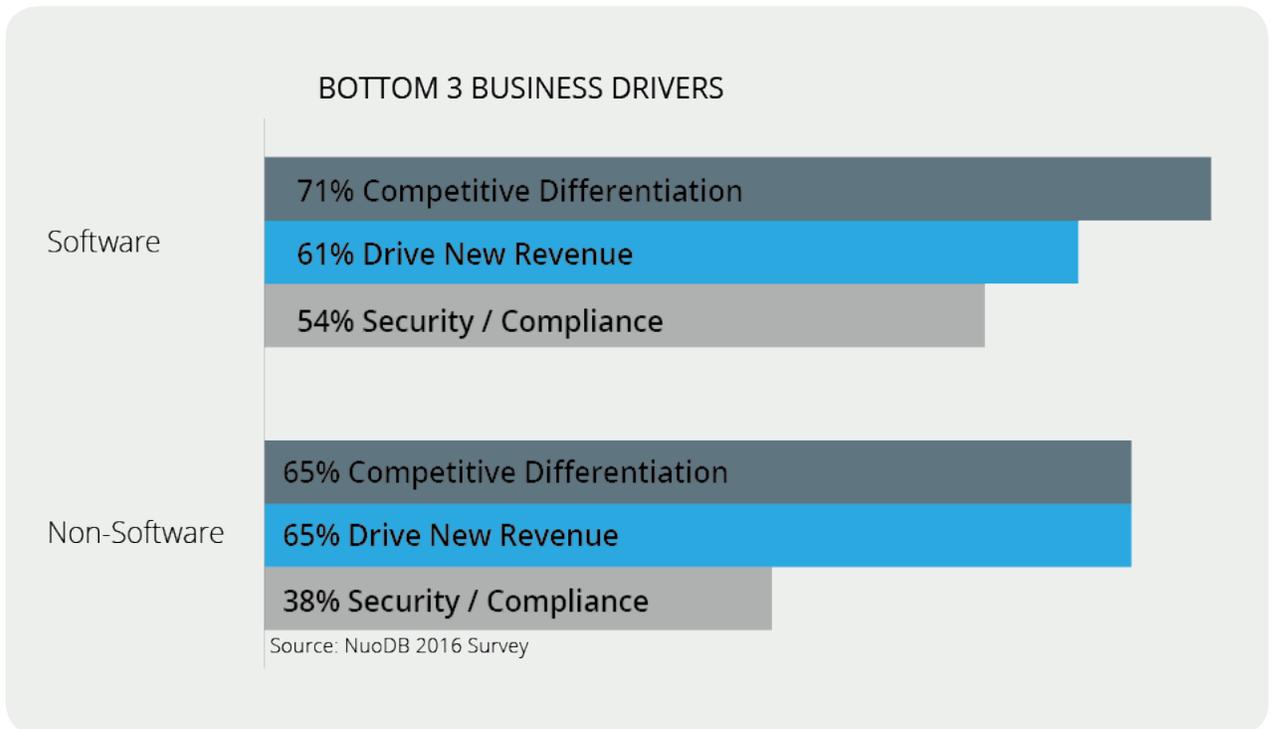
Security / Compliance was the most divisive business driver with 25% ranking it as a top-2 driver and 40% ranking it as a bottom-2 driver (out of 9).

TOP 3 BUSINESS DRIVERS

Software
70% Agility
62% Time to Market
48% Total Cost of Ownership

Non-Software
68% Agility
47% Time to Market
43% Total Cost of Ownership

Source: NuoDB 2016 Survey

While "Business Agility" and "Time to Market" were critical for both software and enterprise organizations, software companies were more interested in "TCO" compared to non-software companies who valued "Security."

BOTTOM 3 BUSINESS DRIVERS

Software
71% Competitive Differentiation
61% Drive New Revenue
54% Security / Compliance

Non-Software
65% Competitive Differentiation
65% Drive New Revenue
38% Security / Compliance

Source: NuoDB 2016 Survey

Despite a focus on "Business Agility," all organizations overwhelmingly ranked "Competitive Differentiation" and "Drive New Revenue" among the least important business drivers.

DATABASE MATTERS

When asked about the importance of the database within active and planned initiatives, 92% of all organizations ranked it as either "critical" or "very important", and none ranked it as "irrelevant."

We also asked respondents which characteristics of the database were important when it came to deciding on a database for cloud, modernization, and/or digital transformation initiatives.

Performance was the single most critical database characteristic for all organizations, with 45% of non-software companies ranking it critical and 38% of software developers saying the same. An additional 39% (non-software) and 42% (software) ranked it as "very important."

Minimizing downtime came in second with 38% of all organizations characterizing it as critical and an additional 40% ranking it as very important. Meanwhile, software companies were more likely to call out the ability of the database to deploy in the cloud as critical (37%) with only three percent characterizing it as "irrelevant" compared to just 23% of non-software companies ranking it as critical and 11% saying it's irrelevant.

9 OUT OF **10**
say the database is either "CRITICAL" or "VERY IMPORTANT" in digital transformation projects

STILL CRITICAL: CONSISTENCY, DURABILITY, SQL

Despite general interest in NoSQL - due in large part to the move to the cloud and modern architectures - 69% of respondents ranked standard SQL support to be either critical or very important, and 68% ranked ACID critical or very important as well.

Fewer than 40% of our respondents used NoSQL, but those that did still appreciated the value of ACID guarantees (75% - a higher percentage than the general population!) and SQL (62%) in their database. More than a third (34%) of NoSQL users ranked SQL as "critical" compared to just 27% of all respondents.

Despite the move to the cloud and modern architectures, companies still recognize the value and importance of traditional SQL and ACID semantics. Increasingly companies are looking to combine the best of the modern infrastructure - notably a resilient, scale-out, commodity architecture - with a traditional SQL and ACID foundation.

Meanwhile, software companies were particularly likely to rank ACID as "critical."

Finally, the ability to scale elastically to accommodate growth or peak loads with 69% of all respondents ranking it as either critical (22%) or very important (47%). When you break that down however, you find that only 18% of people who solely use traditional relational databases (e.g. Oracle, Microsoft SQL Server, IBM DB2, or open

KEY FEATURES OF DATABASES

Source: NuoDB 2016 Survey
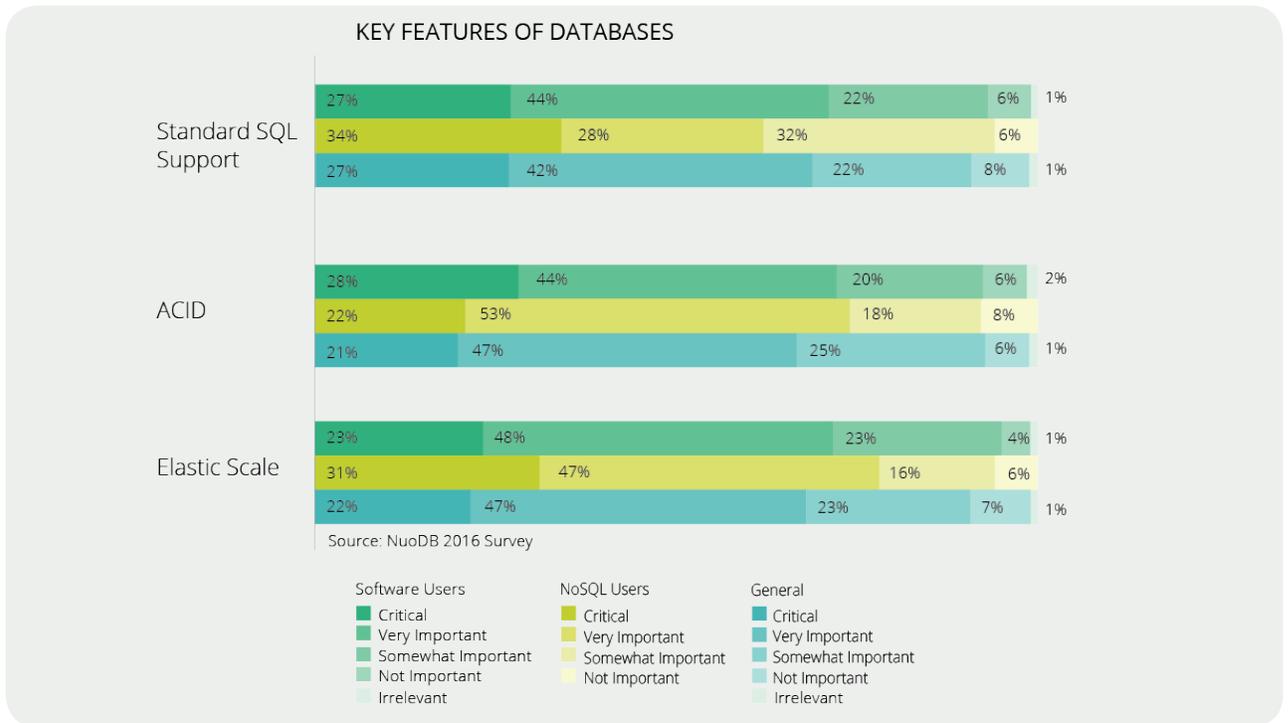
Organizations are overwhelmingly interested in achieving "Elastic Scale," while preserving "ACID" and "SQL."
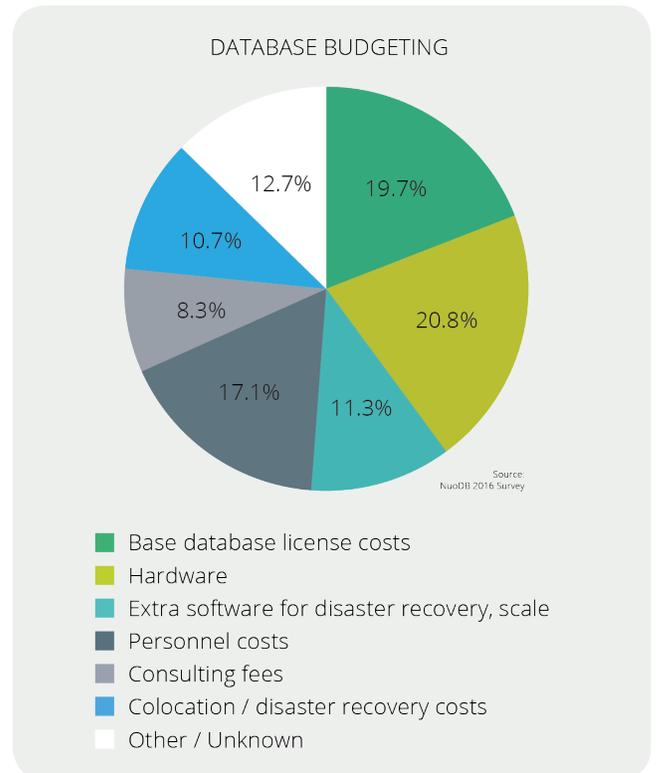
source relational databases such as MySQL or Postgres) rank elastic scale as critical compared to 29% of users who either rely solely on non-traditional databases or use a mix of databases.

It's clear from these findings that as organizations look to move to the cloud and deploy more modern architectures, they still highly value traditional SQL and ACID guarantees but want to pair it with the elasticity and benefits of cloud architecture.

WHERE DOES THE BUDGET GO?

We asked respondents to estimate the proportion of their database budget that goes to different line items. In general, respondents spent about 20% of their database budget on licensing. In contrast, organizations that have cloud-only infrastructures estimated they devoted 27% of their budget to database licensing.

Companies that only use Oracle as their primary database (12% of our total respondents) estimated that 26% of their

DATABASE BUDGETING

Source: NuoDB 2016 Survey

- Base database license costs
- Hardware
- Extra software for disaster recovery, scale
- Personnel costs
- Consulting fees
- Colocation / disaster recovery costs
- Other / Unknown

database budget goes to database licensing. Meanwhile, the nine percent of respondents who don't use Oracle, Microsoft, or IBM estimate that only 12% of their budget goes to licensing.

SUMMARY

It's clear from our survey results that organizations of all stripes are actively embracing digital transformation and data center modernization technologies. Even containers and microservices are seeing expected adoption rates of more than 70% in the next 12 months.

But what's more important are the reasons. Organizations know that customer trends can change quickly and that creating an environment where the business can react swiftly to changing market conditions is key to not just success, but survival.

Nowhere is this more true than for software companies. As the software industry transitions rapidly from on-premises implementations to a world dominated by on-demand, software-as-a-service offerings, it's not enough to be able to make that transition today - it's critically important that they be able to get new products and updates out quickly and cost effectively.

> **Creating an environment where the business can react swiftly to changing market conditions is key to not just success, but survival.**

As this analysis shows, the database can be a driving force behind the success of those initiatives. Increasingly companies are looking to combine the best of the modern infrastructure - notably a resilient, scale-out, commodity architecture - with a traditional SQL and ACID foundation. That's why the market is demanding an elastic SQL database that maintains ACID compliance, meets performance expectations and operates in cloud environments.

∩UODB®

NuoDB's elastic SQL database for cloud applications helps customers get applications to market faster and reduce their total cost of ownership. Software vendors and ecommerce companies rely on NuoDB to obtain the combination of scale-out simplicity, elasticity, and continuous availability that cloud applications require, with the transactional consistency and durability that databases of record demand.
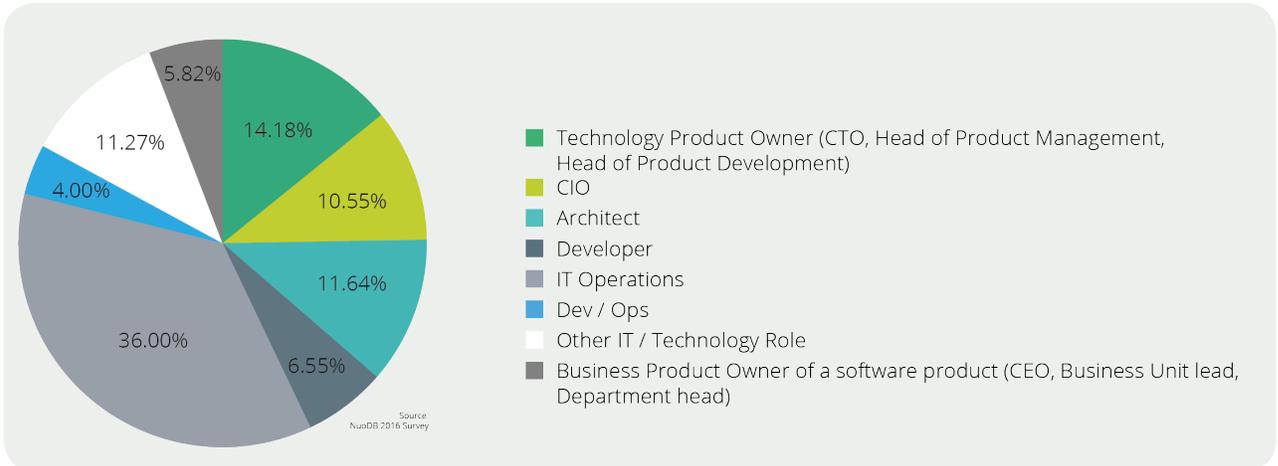
As a result, customers can capitalize on modern technologies such as cloud computing and containerization to ensure their applications are ready for today's evolving expectations, as well as any future requirements.

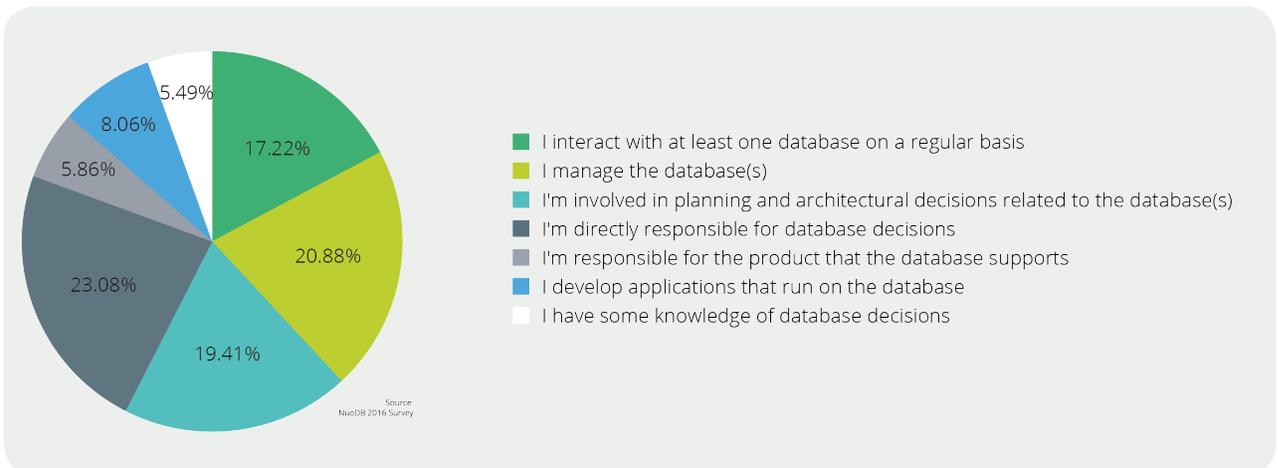NuoDB is headquartered in Cambridge, MA, USA, with offices in Dublin and Belfast.

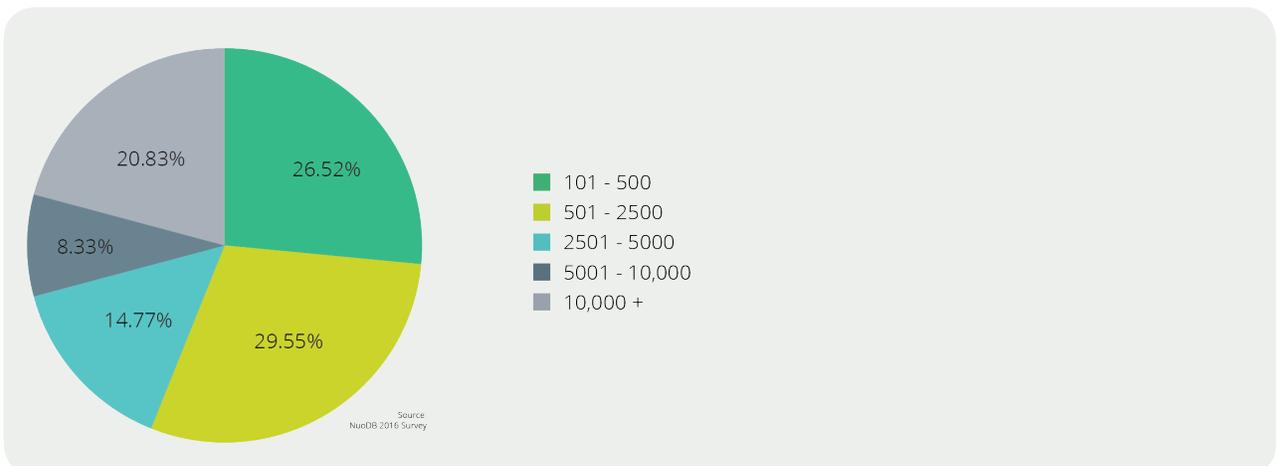For more information, visit **nuodb.com**.

APPENDIX

Which of the following best describes your role?

Technology Product Owner (CTO, Head of Product Management, Head of Product Development) — 14.18%
CIO — 10.55%
Architect — 11.64%
Developer — 6.55%
IT Operations — 36.00%
Dev / Ops — 4.00%
Other IT / Technology Role — 11.27%
Business Product Owner of a software product (CEO, Business Unit lead, Department head) — 5.82%

Source
NuoDB 2016 Survey

Which of the following best describes your interaction with the database(s) within your organization?

I interact with at least one database on a regular basis — 17.22%
I manage the database(s) — 20.88%
I'm involved in planning and architectural decisions related to the database(s) — 19.41%
I'm directly responsible for database decisions — 23.08%
I'm responsible for the product that the database supports — 5.86%
I develop applications that run on the database — 8.06%
I have some knowledge of database decisions — 5.49%

Source
NuoDB 2016 Survey

How many employees work at your company?

101 - 500 — 26.52%
501 - 2500 — 29.55%
2501 - 5000 — 14.77%
5001 - 10,000 — 8.33%
10,000 + — 20.83%

Source
NuoDB 2016 Survey

Which of the following best describes your business (multiple answers allowed)?

5.90% Other

1.48% Transportation

1.48% Government

2.21% Hospitality

2.21% Entertainment

2.58% Energy / Utilities

3.32% Defense

4.06% Construction

4.80% Retail / eCommerce

4.80% Healthcare

5.90% Telecommunications

9.23% Education

11.81% Manufacturing

12.18% Financial Services / Insurance

13.28% Other Technology - Hardware, reseller, systems integrator, cloud provider, etc.

14.39% Consulting (Business or Technology)

37.25% Software

Source: NuoDB 2016 Survey