State of Legacy VB6/Classic ASP - Support, Modernization and Migration in US:

Survey Report - 2022

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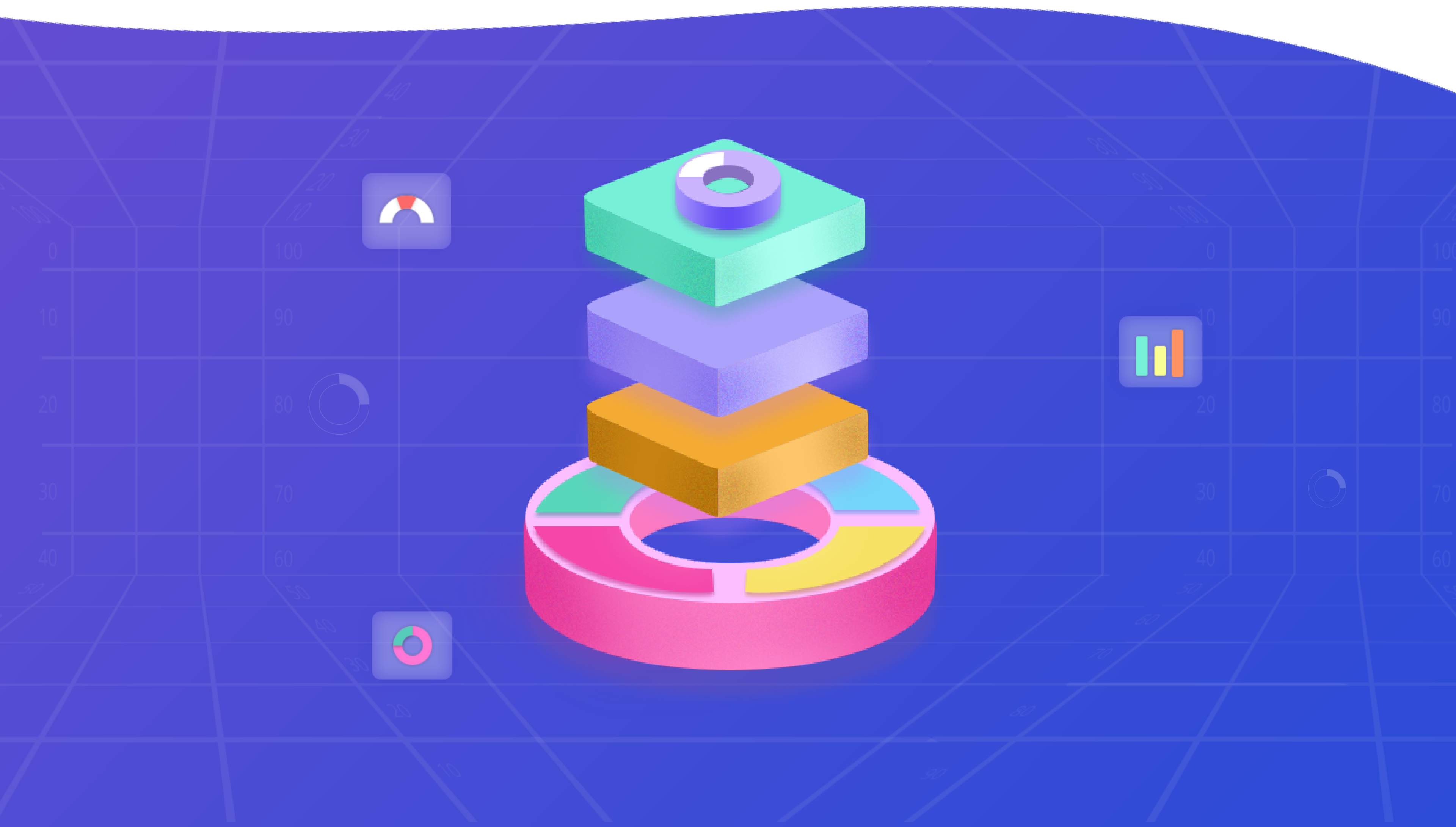**J. Rafanelli**
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Table of Contents

Introduction

Macrosoft is a leader in providing professional services for Visual Basic 6 to .NET and Classic ASP to ASP.NET migration. Both Visual Basic and Classic ASP were powerful software development languages provided by Microsoft. Microsoft ended support for VB in 2008 and Classic ASP in 2020. Though support has ended thousands of companies around the globe continue to use both of these software languages in legacy technology. Macrosoft has developed proprietary tools and techniques to efficiently migrate these legacy programs to a modern technology platform.

As a result of this expertise, Macrosoft conducted the first State of Legacy VB6/Classic ASP - Support, Modernization and Migration in US survey during the last two weeks of March 2022. The survey was conducted using SurveyMonkey with 19 multiple-choice questions.

Requests to complete the survey were distributed to our client contact list of 12,248 professionals. Additionally, survey requests were published in the following VB/ASP/.NET developer groups:

> **ASP.NET,C#/VB.NET Developer/Programmer**
> **VB Developer**
> **ASP.NET,C#/VB.NET Developer/Programmer**
> **ASP.NET MVC Developers**

A total of 513 individuals from more than 442 identified companies participated in the survey. 80% of the participants completed the entire survey. Based on the diverse group that was requested to complete the survey, the robust responses across multiple companies, industries, and the survey completion percentage rates, the results are very reliable.

Survey results are presented in aggregate form, so no single individual is identifiable. In addition to the direct tabulations and graphs of survey results we also provide our analysis of results, their implications and impact.

We plan to perform an annual survey of the ASP/VB6 Migration industry, although the questions will evolve over time.

Questions about this survey can be directed to **John Kullmann, COO, Macrosoft Inc, jkullmann@macrosoftinc.com**.

Macrosoft is prepared to provide an industry expert who can present these results as requested to industry user groups.

Summary of Key Insights from Survey

- Most companies choose to outsource the development, support as well as migration of legacy ASP/VB applications.

- Most companies indicate that their legacy ASP/VB applications need changes and updates as often as many times a year to monthly.

- Being able to work in the cloud is most important to many businesses as they modernize their applications.

- Lack of revenue made from modernization efforts stands out to be one of the biggest impediments for companies to modernizing to a new platform.

- As current members move on to other languages or retire, fewer developers will remain available to support maintain and enhance existing VB/ASP applications.

- The top two driving factors we found for companies to begin migration is to ensure long term viability of the company and the major enhancements needed.

- WPF/C#.NET (Microsoft.Net - Desktop based) and ASP.Net/MVC 5 (Microsoft.Net Web based) are the top two choices for ideal target platform for migrating legacy ASP/VB applications.

- Once started, many companies expect to get the migration done within a year.

In the following sections, we will take a closer look at each survey question and provide detailed analysis and our observation

Is your ASP/VB application used in-house to support your company, or used by your clients?
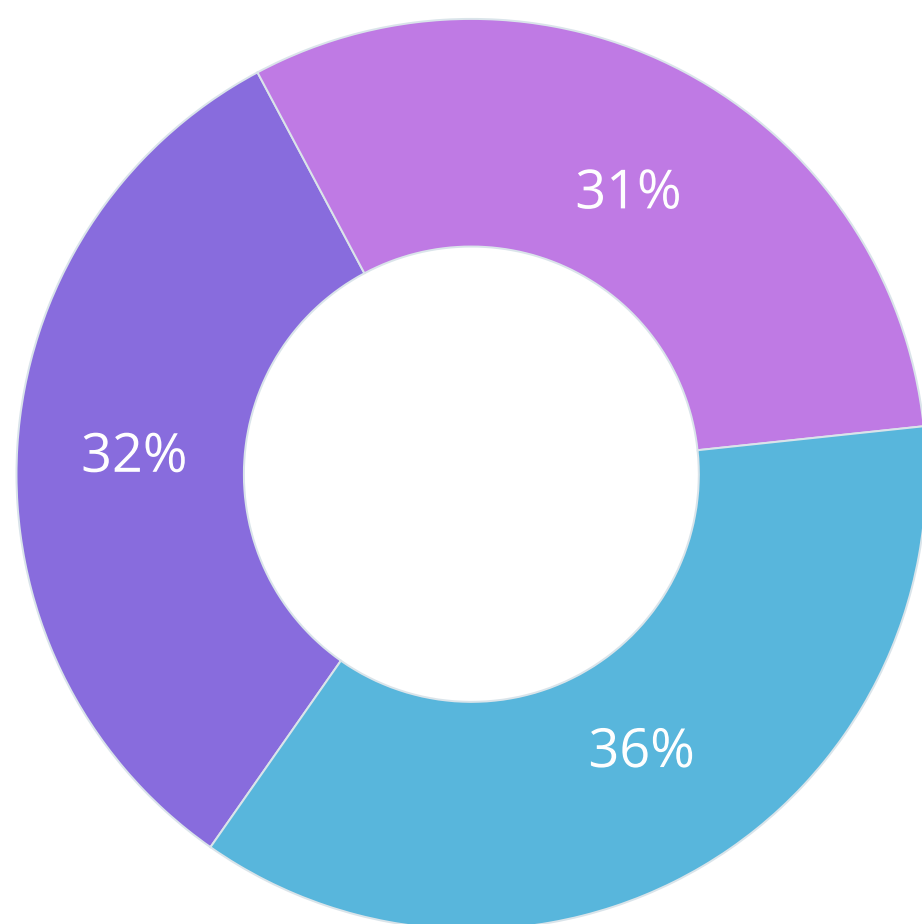
Used in-house by our employees — 32%

Used externally by our clients — 31%

Used by both clients and employees — 36%

Survey Findings

36% of participants used their ASP/VB applications to support both clients and employees. 32% used in-house only and 31% used externally by the clients.

Analysis

Both ASP and VB based applications approached their end-of-life a while ago. Yet we found over one third of the companies continue to rely on legacy applications to support both the in-house employees and the clients. Now is the time to transform your business to the future. While considering migration options, focus on choosing a platform such as .NET which is robust, secure, mobile-ready and lends your application zero downtime with its fast & easy maintenance capability.

Was your ASP/VB program developed in-house or by an external software development firm?

Developed in-house 27%

Developed by a software firm 47%

In-house + Outsourced 26%

26%

47%

27%
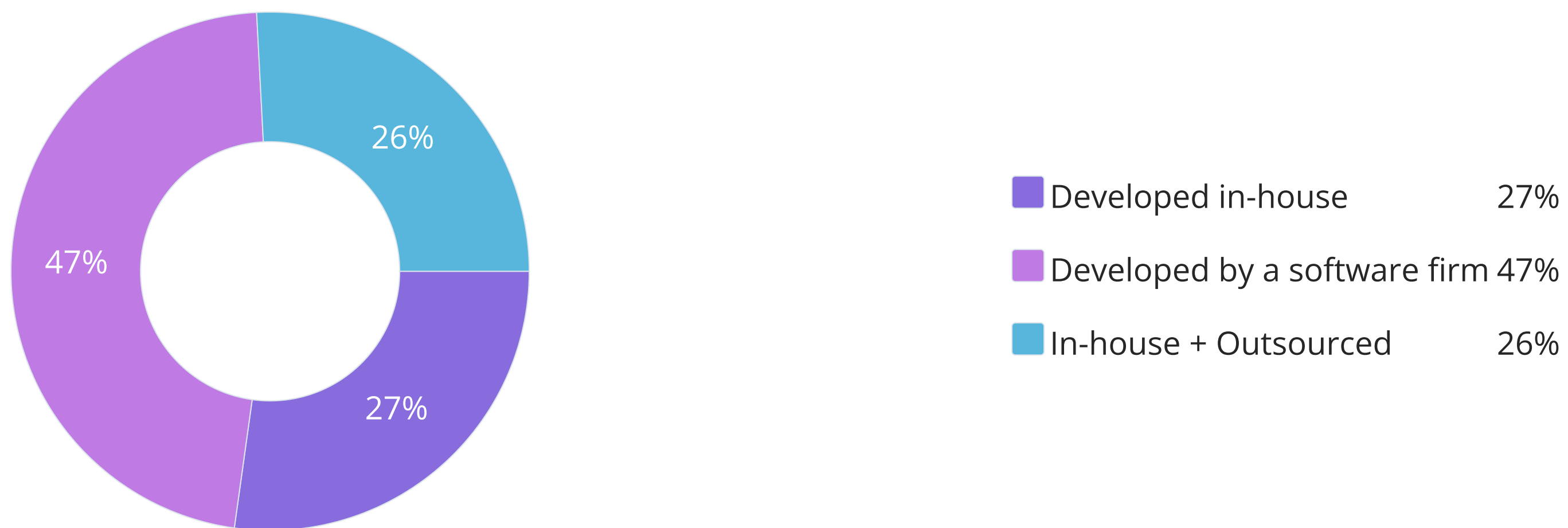
Survey Findings

47% of participants outsourced their ASP/VB applications development to a software firm. 27% developed the applications in-house and 31% were combined effort.

Analysis

It's not a surprise for us that 73% of the companies outsourced some or all of their development effort. It is of course common for organizations to rely on the expertise and additional resources of software development companies to build custom applications. The concern this raises is two-fold:

1 **Company's internal developers must ensure they acquire full knowledge of the source code in order to be able to update and maintain the application once initial development is done.**

2 **Companies must ensure they own the underlying source code allowing them to make changes, updates or do other modernizations to the application.**

How frequently do you make changes / updates to the current ASP/VB application?

■ Monthly or more (updated in the past few weeks)	31%
■ Few times a year (updated in the past few months)	30%
■ Once a year (updated about a year back)	22%
■ Every few years (updated a few years back)	11%
■ Never, as long as it is working (No recollection of when it was last updated)	6%

Chart values: 22%, 11%, 6%, 31%, 30%
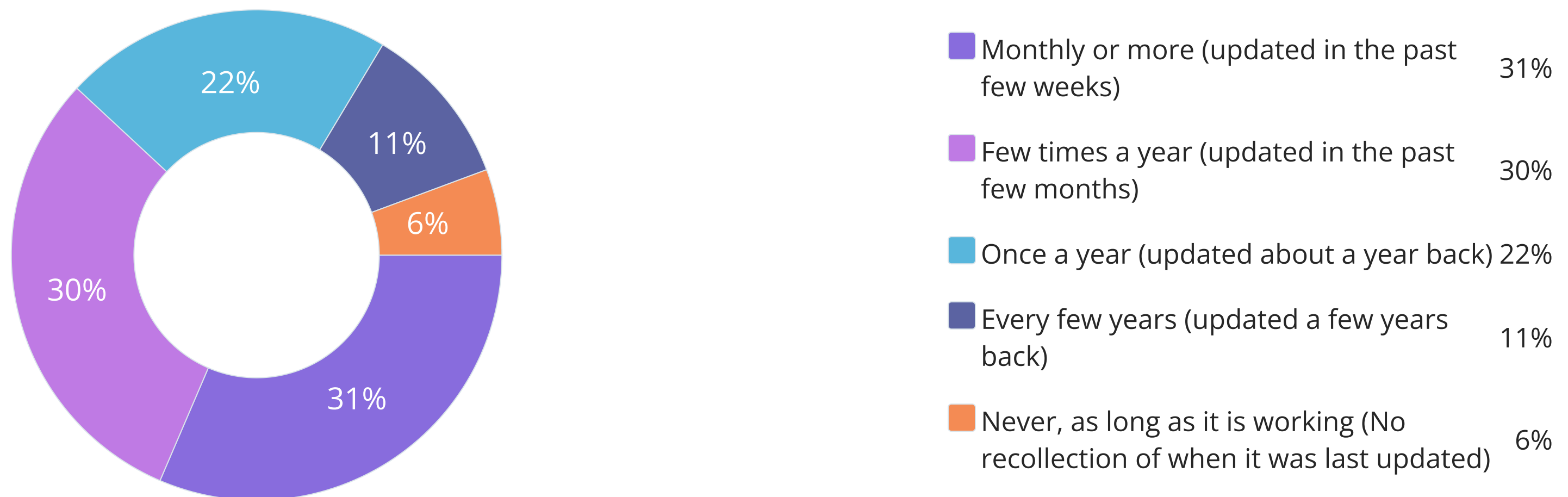
Survey Findings

31% of participants indicate changes and updates are made on a regular basis of monthly or more frequently. 30% indicate changes are made a few times a year. 22% indicate changes occur annually. 17% indicate it's been years since they must update their ASP/VB applications.

Analysis

We found that over 60% of companies indicate their VB/ASP applications undergo changes every few weeks or every few months. With consistent needs for updates and changes. Companies need to consider if VB/ASP remains the right technology platform to support their organization. They will be better supported going forward by having a modern technology platform. We say this for two reasons:

1 The modern application provides a much broader range of functionality (cloud, web, microservices, etc.); and

2 There is a much larger pool of qualified developers to support a modern technology stack.

Rate the potential risks your legacy ASP/VB application may face.

Chart legend: High Risk (purple), Some Risk (magenta), Low Risk (blue), No Risk (teal), I don't know (red)

Risk category	High Risk	Some Risk	Low Risk	No Risk	I don't know
System breaking for users	16%	28%	33%	22%	1%
Being an unsupported platform	16%	28%	35%	20%	1%
Incompatible with Operating System (OS)	17%	30%	34%	18%	1%
Security of system	18%	29%	29%	23%	1%
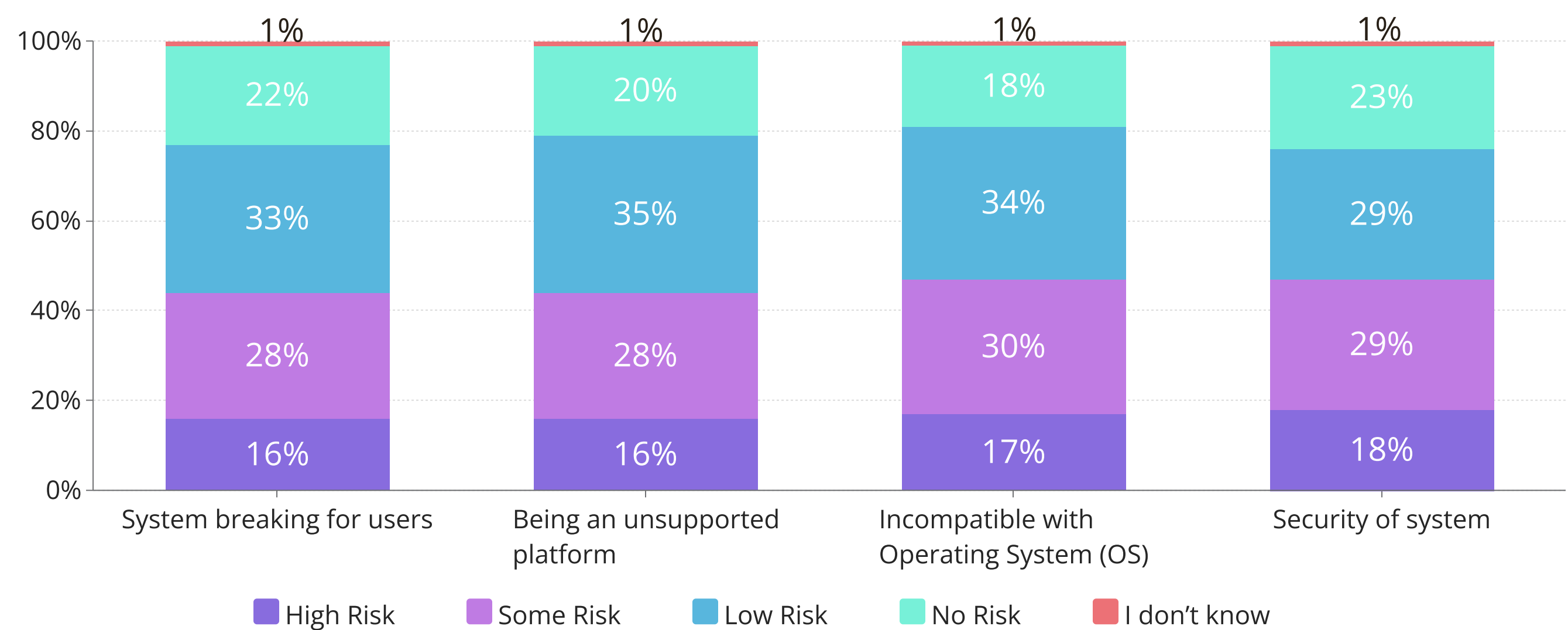
Survey Findings

As shown in the chart above, the survey lists 4 often-cited risks of ASP/VB applications. 47% of respondents rated system security and incompatible with OS as high or some risk. 44% of respondents rated it as high or some risk with the application being on an unsupported development platform and system breaking for users.

Analysis

On average, about 46%, a little less than half of participants identified significant risk for all four of these risk elements: incompatibility with the operating system, system breaking for users, being an unsupported platform, and security of the system. These are real risks and well understood in the industry. We assume companies running mission critical applications in ASP/VB are taking steps to minimize or eliminate these 4 risks. This might include implementing enhanced system access security, or it may eventually result in a going-forward plan to entirely replace the legacy software system.

On the other hand, we see that over 50% of respondents rate these four risks as low risk or no risk at all. These respondents presumably are either not convinced that their ASP/VB application is held hostage to these risks, or more likely they have found ways to eliminate or lessen these risks. Either way, we will be exploring this topic further in our next survey.

Back to Index

What is most important to your business as you modernize your application?

Factor	Most Important	Somewhat Important	A Little Important	Not Important	I don't know
Work in the cloud	29%	37%	23%	10%	1%
Improved security	29%	36%	26%	8%	1%
More flexibility	34%	33%	23%	9%	1%
Enhanced reporting	23%	42%	26%	8%	1%
Scalability	29%	37%	25%	8%	1%
Modern user interface	27%	39%	24%	9%	1%
Implement new features	26%	37%	29%	7%	1%
Change workflow	27%	37%	27%	8%	1%

Legend: ■ Most Important ■ Somewhat Important ■ A Little Important ■ Not Important ■ I don't know

Survey Findings

Eight unique factors are listed in the survey as important drivers for modernization (see chart) and participants were asked to rate each according to its importance.

At the high end of importance, being able to work in the cloud was rated by 67% of respondents as a most or somewhat important factor; at the low end of importance, implement new application features was least important with 63% saying it's little or not important. On average, 65% of the participants consider the eight factors to be important.

Analysis

We want to make clear, ASP/VB6 remains a robust well-performing application framework that has supported many successful companies for the last several decades and continues to do so. Moving to a new platform should be based on specific business needs and benefits, and we believe the above factors are among the keys that are driving modernization efforts.

As an example, improved security can often be a key factor driving modernization. Security audit requirements generally mandate that enterprise systems be on supported software platforms, and a company's auditors, clients or investors will often require it. In this case, it may end up being required for continuing to do business.

Each of the eight factors can have significant business impacts, and each business case evaluating modernization will be different.

How many users are currently working on the application?

■ 10 or fewer	10%
■ 11-25	28%
■ 26-50	38%
■ Greater than 50	23%
■ I don't know	1%

Survey Findings
A majority (61%) of respondents indicate their ASP/VB application has 26 or more users. Only 10% of respondents indicated they have 10 or fewer system users. So, the ASP/VB applications appear to be at least in the lower-mid-range of users or higher.

Analysis
These results suggest to us that the ASP/VB applications surveyed are being used by midsized companies or by mid-sized departments/organizations within larger companies. This further suggests the ASP/VB applications fulfill a very well-defined set of functions in the company, one that is hard to replicate with off-the-shelf or open-source products.

At the smaller end of user range, 10 or fewer, we find only 10% of respondents. This contradicts the often-cited hearsay that the ASP/VB applications remaining tend to be small and have very few users. Our survey results show that the bulk of ASP/VB applications have reasonable-to-high user counts. So, these are custom-built systems supporting mid to large user bases, which of course makes them much more difficult to replace. These larger systems have remained in place for many years and continue to support organizations well.

What is your biggest impediment to modernizing to a new platform?

Impediment	Biggest Issue	Big Issue	Small Issue	Not an Issue	I don't know
Time to do it	20%	26%	39%	14%	1%
Not knowing what to go with	21%	28%	34%	15%	2%
Lack of a budget for the project	17%	26%	32%	24%	1%
Unclear requirements	16%	34%	31%	18%	1%
Change not result in revenue	19%	34%	31%	16%	
System performs fine now	19%	26%	39%	15%	1%
Lack of documentation	20%	27%	38%	14%	1%

■ Biggest Issue ■ Big Issue ■ Small Issue ■ Not an Issue ■ I don't know
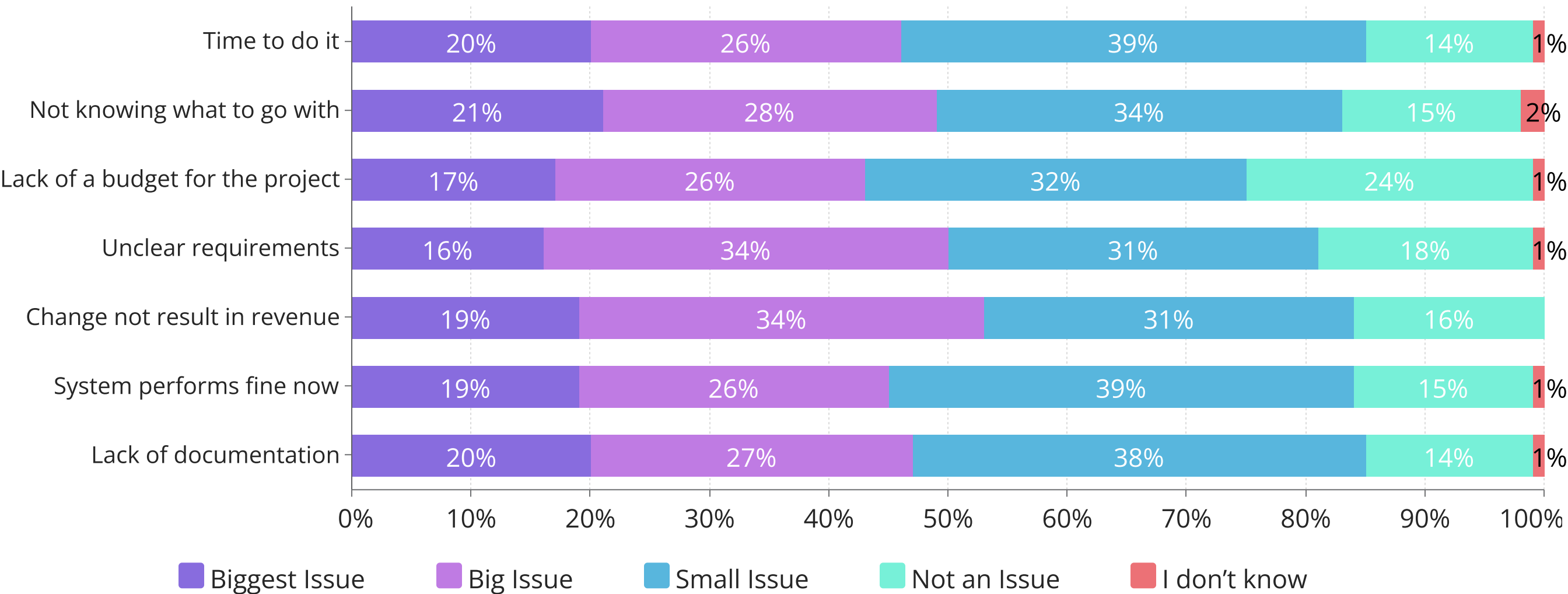
Survey Findings

The survey posed seven top reasons or impediments preventing companies from modernizing their ASP/VB application (see chart). Survey results show the leading reason to be change does not result in new revenue for the business with 53% of respondents saying that is either a big or the biggest issue preventing them from starting.

Interestingly, most respondents (54%) indicate that the often-extended time to do it is not an issue or only a small issue. That is contrary to the conventional wisdom at least with respect to full migrations.

Analysis

Based on the 510+ people that responded to the survey it seems the lack of new revenue made from modernization efforts stands squarely in the way of progress. We also find over half of the companies indicates budget is not an issue for them. This shows the rising concern for lack of ROI for the modernization efforts. We will see how the responds evolves next year.

How big is the application in terms of number of lines of code?

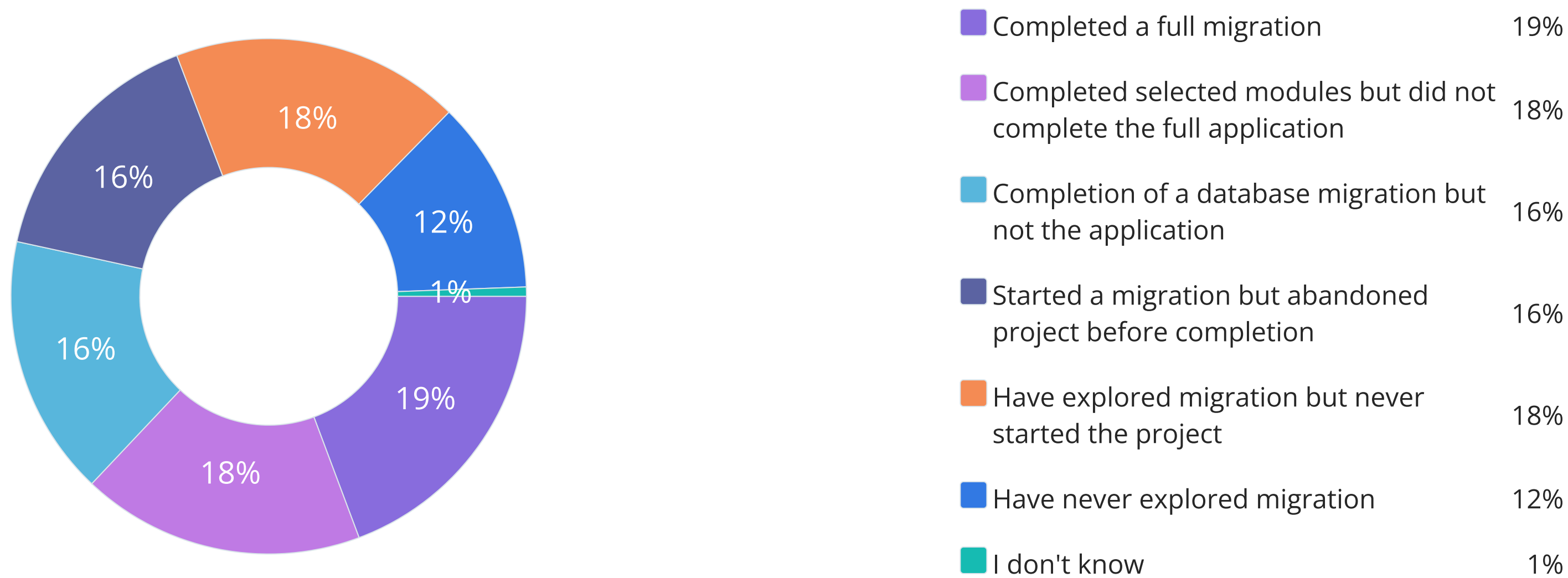|		
50,000 or fewer 0		4%
50,001 to 100,000		17%
100,001 to 250,000		25%
250,001 to 500,000		27%
500,001 to 1,000,000		18%
Greater than 1,000,000		5%
I don't know		4%

Survey Findings

Survey results show the ASP/VB applications of many of our respondents are definitely not small systems. 23% cited applications with more than half a million lines of code. On the other side of the size range, only 4% had fewer than 50,000 lines of code. The bulk of the respondents (69%) cited midsize applications with 50 to 500,000 lines of code.

Analysis

Lines of code are one relevant measure of the overall size of an ASP/VB app, but it is not the only measure. Future surveys will take a deeper dive into other size and complexity issues such as: programs, forms, controls, reports, etc. For companies wanting a deeper understanding of the size of their current ASP/VB app, we recommend utilizing the free tool, Code Matrix, which provides users with an Excel analysis detailing the size statistics of the application.

Have you ever begun the process to migrate your ASP/VB application?

■	Completed a full migration	19%
■	Completed selected modules but did not complete the full application	18%
■	Completion of a database migration but not the application	16%
■	Started a migration but abandoned project before completion	16%
■	Have explored migration but never started the project	18%
■	Have never explored migration	12%
■	I don't know	1%

Survey Findings

Participants were asked if they ever had begun the process of migrating their ASP/VB application and if they had what was the current status. 19% indicated their company had completed the full migration. 18% had completed select modules but not the full application and 16% had migrated the database but kept the application in the ASP/VB framework. 16% abandoned the process before completion.
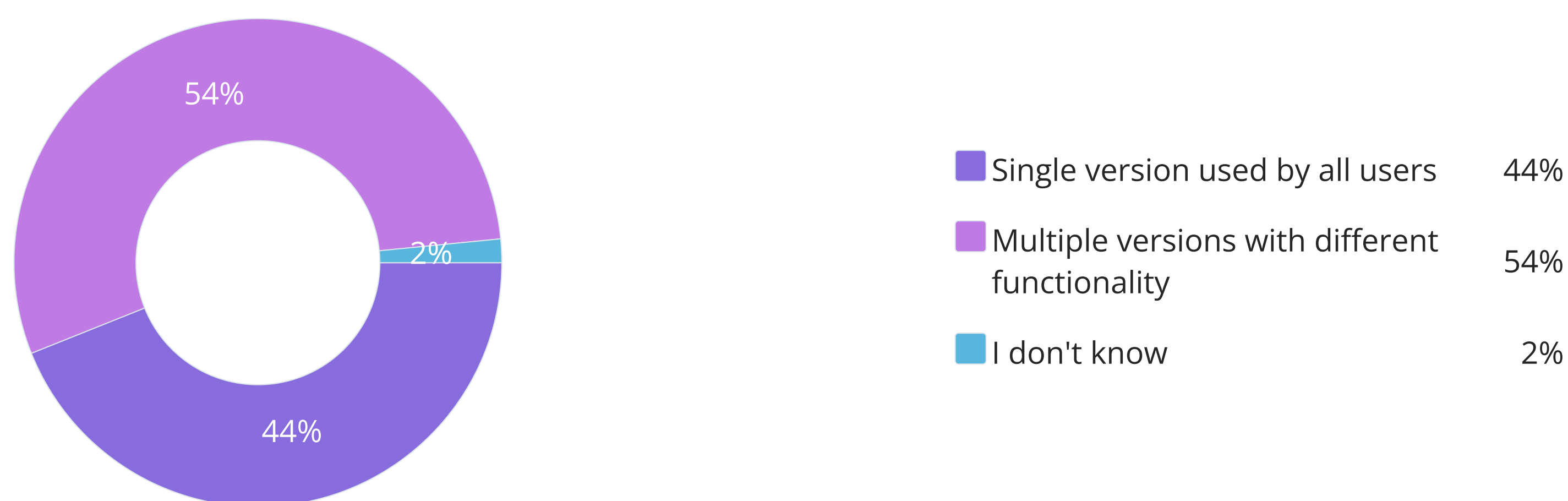
Analysis

18% of participants said the modules selection is complete and 16% with database migration done. This is definitely a good step in the right direction for modernization. This shift may have been precipitated by security concerns associated with protecting the ASP/VB system's underlying data.

Unfortunately, 16% of companies that began a migration abandoned the process before completion, but we are not surprised by this finding. It is a major undertaking especially for large ASP/VB applications, one that takes excellent know-how and best practices, and a lot of incremental development resources, both of which are often beyond a company's steady-state capabilities.

Future surveys will dig deeper into the reasons causing companies to abandon their efforts before completion.

# Do you have a single instance/version of your application or multiple customized versions per client?

54%

2%

44%

■ Single version used by all users   44%

■ Multiple versions with different functionality   54%

■ I don't know   2%

Survey Findings

Over half of the respondents 54% indicate that their current ASP/VB application has different versions with different functionality. On the one hand this is a great customization benefit of ASP/VB deployed as a desktop solution. On the other hand, versioning becomes extremely complex and time-intensive for supporting multiple external clients having different functions within their version of the application.

Analysis

It is of course not a good thing in general for companies to customize the functionality of an application to support individual clients' needs and requirements or to permit clients to do so themselves. Best practice dictates that new functionality
should be built into the core of the system with clients able to configure functionality to their specific needs. It is critical to have a complete documentation understanding of every version used by clients. If undertaking a modernization or migration project, it's generally best to start with the most complex version of the application and then have partitions to allow select functionality to be available for some clients and masked for others. So, the core application provides all functionality, it's simply whether or not parts of the application become enabled for an individual client requirement. Deployment as a single version greatly assists in upgrading and support/maintenance of the application.

How many people are part of your in-house development staff, including both employees and contractors.

5 or fewer	5%
6– 10	20%
11– 20	35%
21-50	28%
More than 50	11%
I don't know	1%
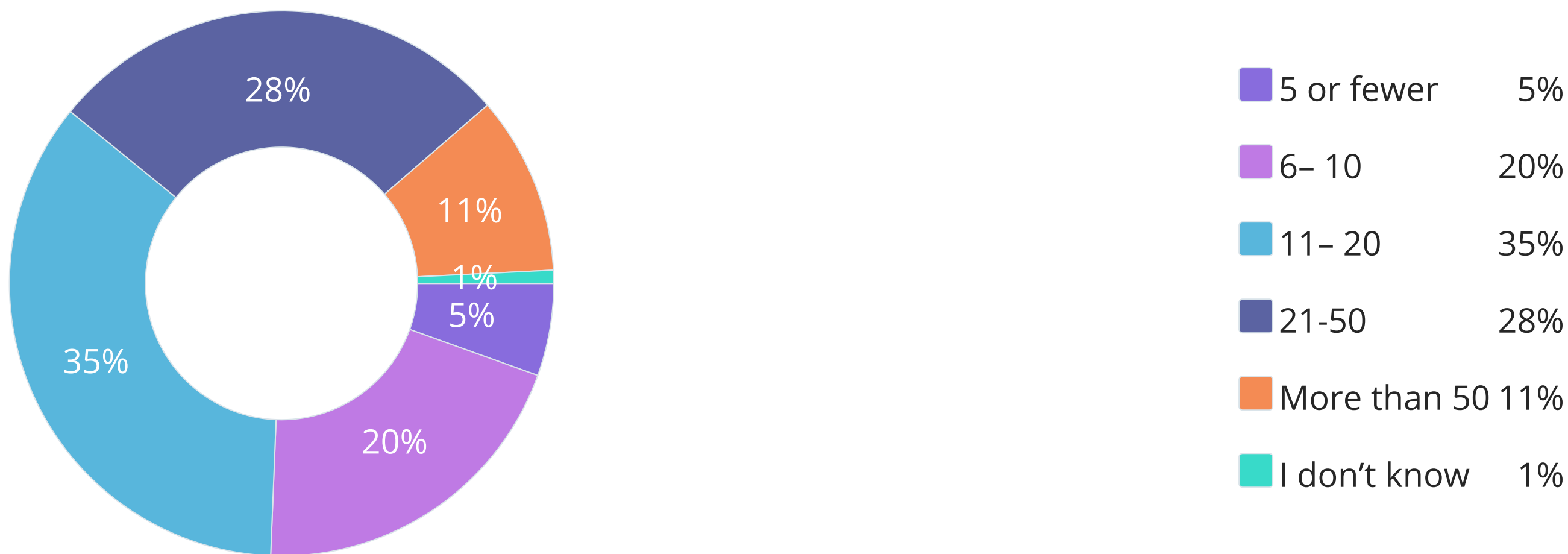
Survey Findings

We found companies responding to this survey to have a distribution in a number of in-house developers centered around 20. 25% had ten or fewer developers 11% had greater than 50 in-house developers. The remaining 63% had between 11 and 50 developers.

Analysis

Most companies had a small too modest size of an in–house development staff. In our view this can create two challenges for these companies:

1 Risks to the company if 1-2 key developers were to leave and take much of the knowledge of the ASP/VB system with them; and

2 These companies almost certainly do not have enough in-house development staff size to accomplish a full ASP/VB migration project with inhouse staff only.

So, while the risk of staff losses is great, the company will most likely have to look for support from an outside vendor to undertake a full migration. The low end of the size distribution (5 or less) is particularly sensitive to these risks.

What languages does your team develop in (for your company) in addition to ASP/VB?
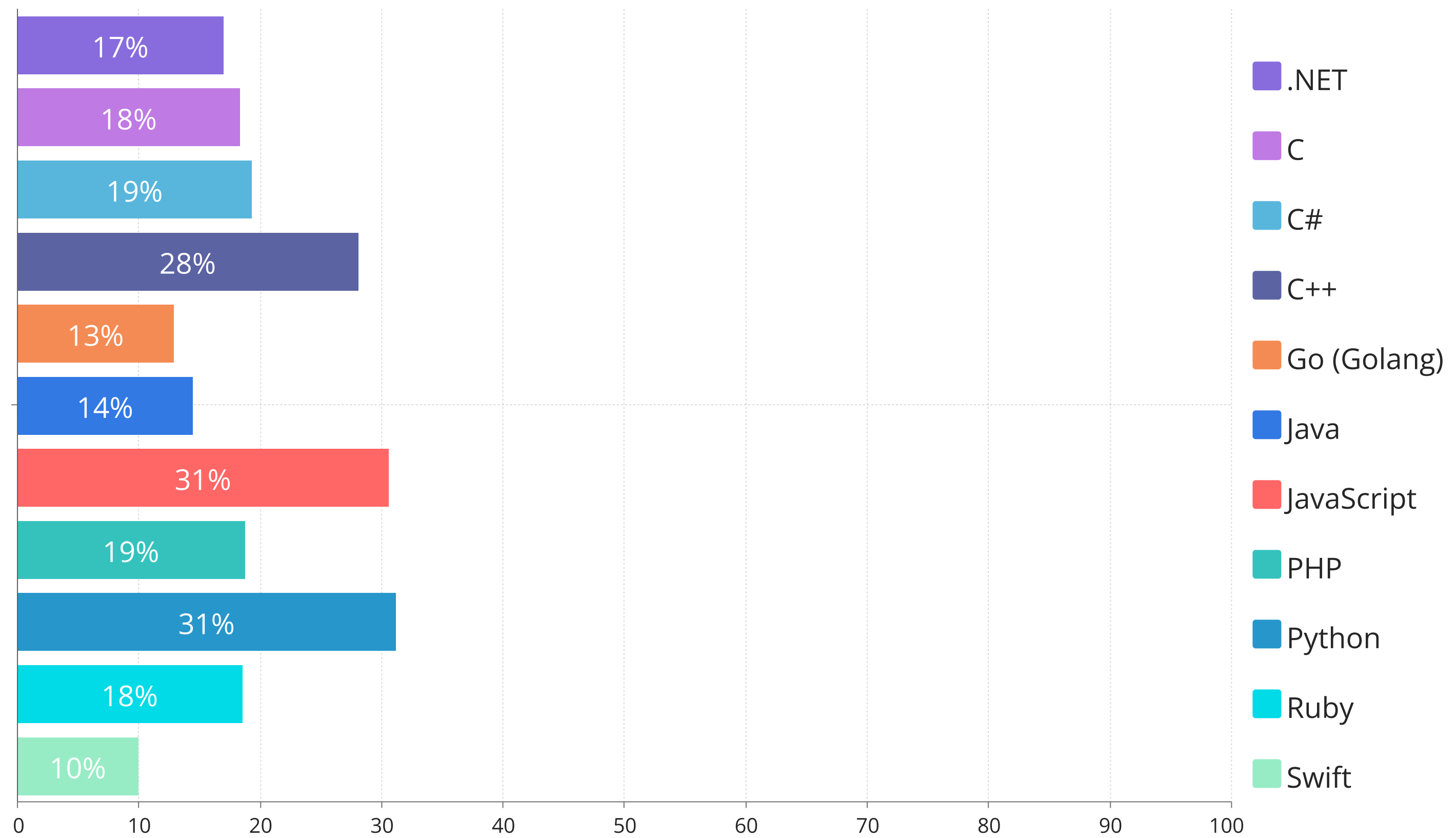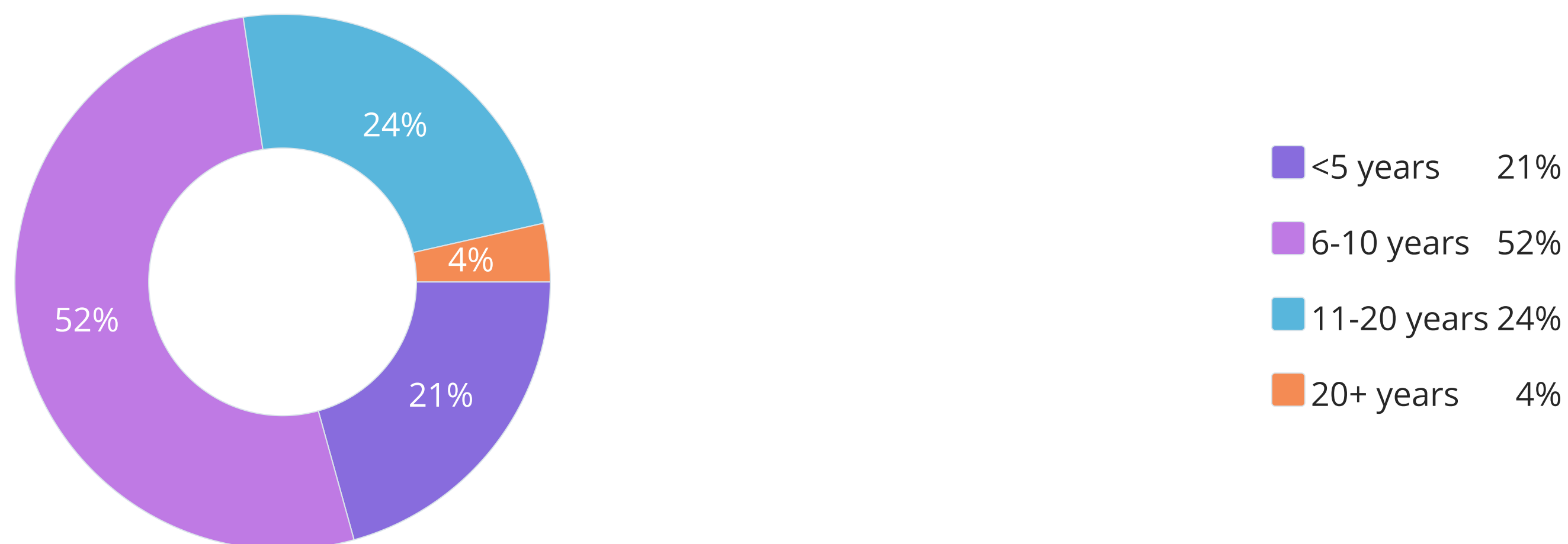

Survey Findings

We found a wide range of development languages being used by companies that participated in the survey. These are companies that have one or more ASP/VB applications to maintain. Python and JavaScript tied the most common languages used. This will be an interesting chart to watch year over year to see which languages gain greater acceptance.

Analysis

One thing is sure, the developers working with the newer languages such as Python cannot (and most often will not) work to build up ASP/VB skills to maintain the company's ASP/VB applications. Our view is that there is a steady and accelerating trend towards open-source development languages both for application development as well as for databases. The industry is seeing the maturity of open-source technologies. We will see if subsequent surveys bear this out.

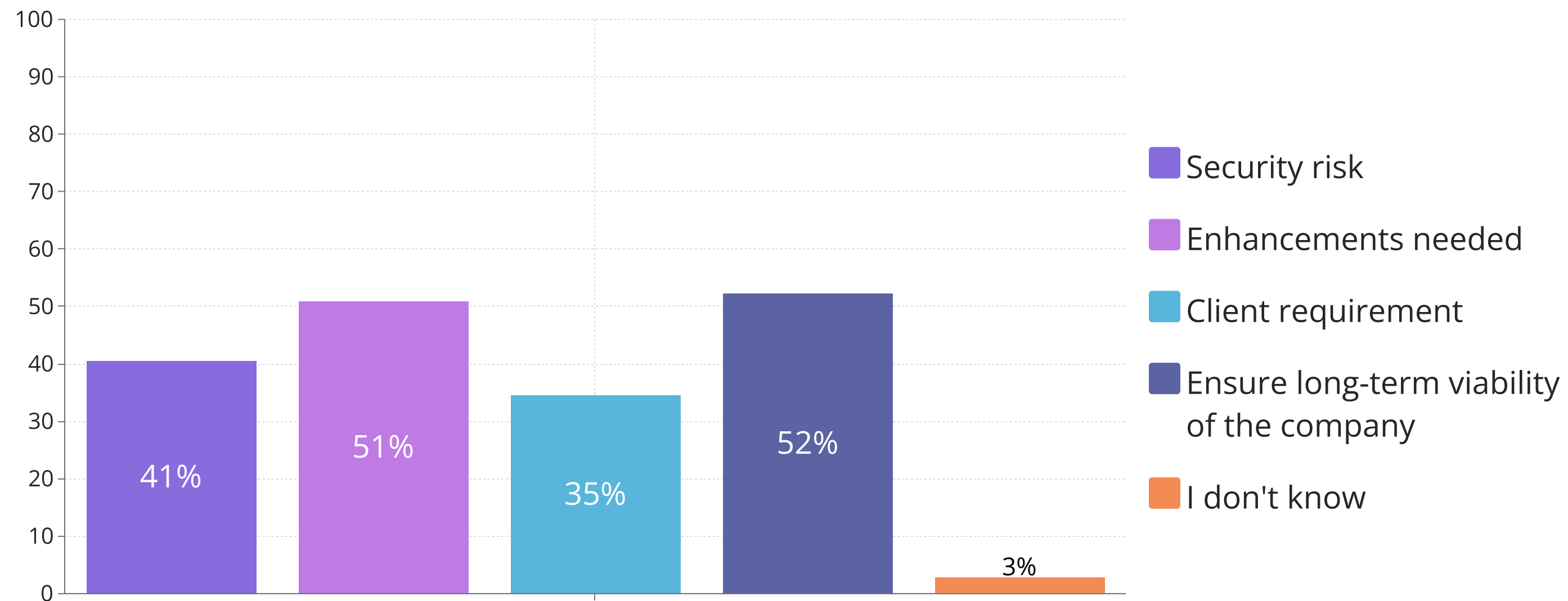# How many years have you been using your ASP/VB application?

■ <5 years	21%
■ 6-10 years	52%
■ 11-20 years	24%
■ 20+ years	4%

Survey Findings

As expected, survey results confirm the ASP/VB development community is not weighted with new entrants, with only 21% utilizing the language for five or fewer years. We see 28% have been using ASP/VB for over 10 years. 52% used ASP/VB for 6 to 10 years.

Analysis

This chart is somewhat alarming when we consider the long-term viability of applications running on ASP/VB. Only a small fraction of respondents is new to these development languages. As current members move on to other languages or retire, fewer developers will remain available to support maintain and enhance existing VB/ASP applications. It is our view that very few new VB/ASP applications are being created but rather existing applications are being supported to continue to deliver business value.

What would cause you to begin a migration/modernization?

Legend:
- Security risk
- Enhancements needed
- Client requirement
- Ensure long-term viability of the company
- I don't know

Bar values: 41%, 51%, 35%, 52%, 3%

Survey Findings

Users were asked what would cause the need for their company to begin a modernization or migration of an existing ASP/VB application. 52% said the driving factor could be to ensure long term viability of their company, and 51% chose a need for a major required enhancement.

Analysis

The top choice, to ensure the long-term viability of their company, is indeed a very dramatic statement. We presume these respondents are referring to the fact that migrations of their ASP/VB application would open up the many benefits of modern technology and without those benefits their company will likely fall further and further behind competitors. Those companies clearly must take a close evaluation of whether or not to migrate and enumerate the benefits they will derive from a migration.

It is our view that enhancements should be among drivers towards modernization or migrations, but often within companies generalized security risks are the trigger that gets movement started. Though VB/ASP is solid and not vulnerable to security hacks, it is an unsupported language. Overzealous security compliance or audit departments can often require the modernization of a legacy application.

What would you do with your current old system data if you moved to a new platform?

■ Archive it	34%
■ Migrate data to a new system	63%
■ I don't know	2%
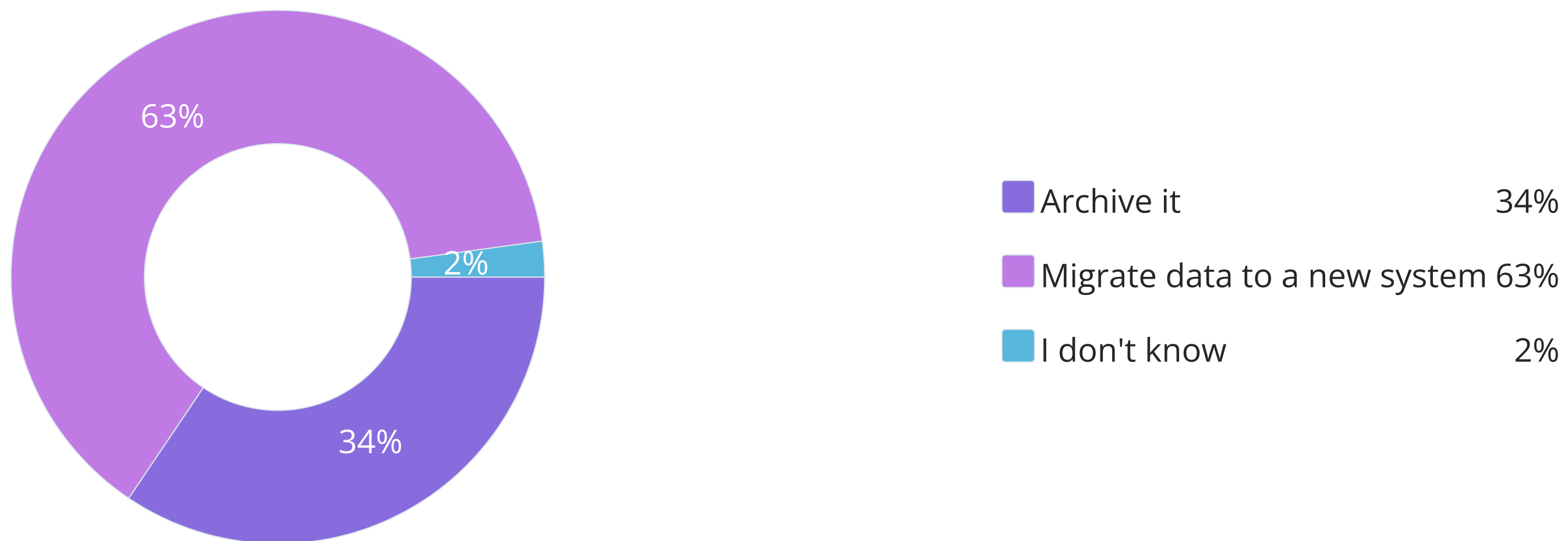
Survey Findings

The majority of respondents (63%) indicate they would migrate their system data to the new application rather than archive it if they went through a migration or modernization process.

Analysis

It is not surprising that current ASP/VB users would want to migrate all their existing data. The ASP/VB applications that are in use today are beneficial because they do exactly what an organization needs and have exactly the data the organization requires. Companies would not want to archive this valuable data but continue to use it in any new or modern application.

Yet, the migration of data can be extremely messy or problematic if not properly planned and implemented. Applications built in ASP/VB have grown over many years, sometimes as many as 20 years.

Data that is many years old can also be problematic when migrated to a new database. There will almost surely be missing information required by new business rules, or there may be bad or corrupt information, or unique characters that may not port properly. The data migration process starts by field mapping between ASP/VB and the data equivalent in the target database. Clean structured data in an optimized database will of course enhance the new system's responsiveness, improving user experience and overall system performance.

How big is the application in terms of number of screens?

Legend:
- 10 or fewer 0   8%
- 11 to 25 0   33%
- 26 to 50 0   42%
- Greater than 50 16%
- I don't know   1%

Chart values: 42%, 16%, 1%, 8%, 33%

Survey Findings

Respondents to the survey indicated their ASP/VB applications are quite large with 16% having greater than 50 screens in the application. A large majority 75% indicate their ASP/VB system has between 11 and 50 screens. Only 8% of respondents have systems with 10 or fewer screens.
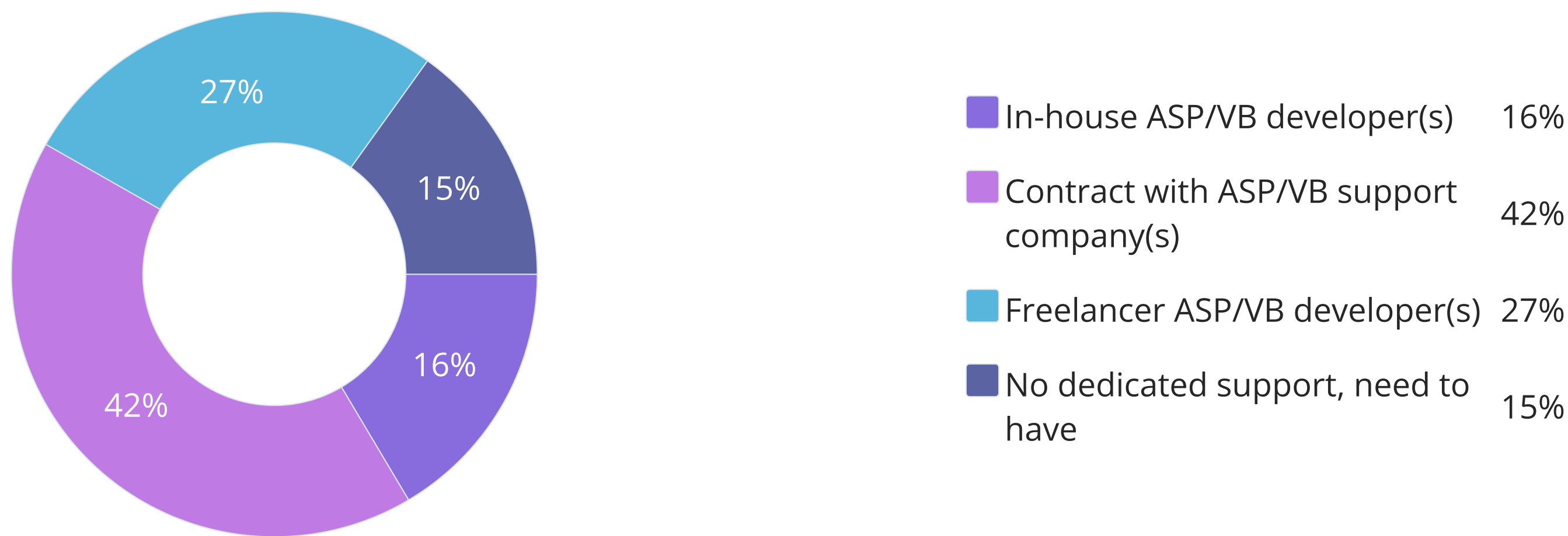
Analysis

The number of screens is another measure of the complexity of an ASP/VB app, and it compliments an earlier survey question on number of lines of code.

The complexity associated with multiple screens is very critical when considering an application modernization or migration. It is not simply what is happening on a single screen, which is easy to test during a migration. More complex and more important are the workflow or user stories that occur screen to screen.

A new design in a modern technology platform might offer the opportunity for screen consolidation allowing complete tasks or functions to be executed without navigating across multiple screens. Improving workflow and screen design is critical to a successful modernization project. It is important to have application users directly involved in any migration to ensure the best user experience. Consider a migration project not as just a 'migration of functionality', but rather as an opportunity to enhance how users experience the application.

Do you have a current ASP/VB Developer(s) to support the application?

■	In-house ASP/VB developer(s)	16%
■	Contract with ASP/VB support company(s)	42%
■	Freelancer ASP/VB developer(s)	27%
■	No dedicated support, need to have	15%

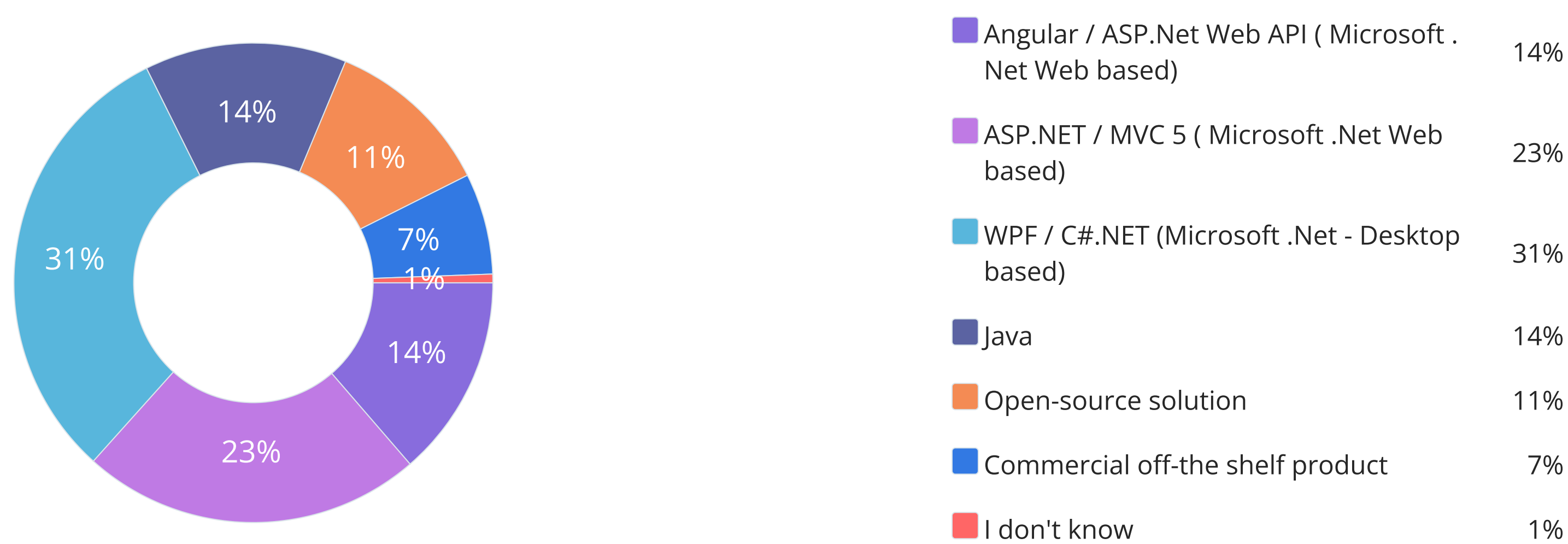Chart values: 27%, 15%, 16%, 42%

Survey Findings

Respondents were asked whether their application is being supported by an inhouse development team, contract support team, or freelance developer, or lastly has no support at all. The majority of respondents are contracting with an ASP/VB support company (42%) or are using freelance ASP/VB developers (27%). Only 16% of companies have in-house ASP/VB developers on staff. We are surprised to see that 15% report having no dedicated support.

Analysis

At one level, it is not surprising that the majority (69%) of organizations are using outside support for their ASP/VB application. IT organizations within many companies are centered around newer development languages and platforms. But at another level, this can be concerning, since it leaves the well-functioning ASP/VB application as an island within the company with only outside support, in many cases performed from overseas.

The 27% of respondents that are contracting with freelance developers also present a problem in our view. In this case, the company is putting the ASP/VB application in the hands of a single developer. While there may be cost advantages to this approach, there are obviously also significant risks. Lastly, we need to advise the 15% with no support at all that they should at least establish a relationship with an ASP/VB support organization that they can tap into should they have a need.

What would be the ideal target platform for the application?

■	Angular / ASP.Net Web API (Microsoft .Net Web based)	14%
■	ASP.NET / MVC 5 (Microsoft .Net Web based)	23%
■	WPF / C#.NET (Microsoft .Net - Desktop based)	31%
■	Java	14%
■	Open-source solution	11%
■	Commercial off-the shelf product	7%
■	I don't know	1%

Survey Findings

WPF/C#.NET (Microsoft.Net - Desktop based) and ASP.Net/MVC 5 (Microsoft.Net Web based) are the top two choices for ideal target platform for migrating legacy application. 11% prefer Open-source solution and only 7% favors the commercial off the shelf product.

Analysis

We are surprised to see the lack of interest in the open-source solution and commercial off the shelf products. This might indicate that companies are used to the legacy applications so getting a brand-new product is not their first choice as there would be concern for product training and adoption.

Once started, what is your expected time frame to complete a migration?

■	6 months or less	22%
■	7 to 12 months	38%
■	13-24 months	31%
■	25 months or greater	9%
■	I don't know	1%

Survey Findings

Users were asked what they expected the time period would be to complete a migration to a modern technology platform. 60% felt that it can be completed in less than a year, with 22% indicating 6 months or less. 40% indicated it would be greater than a year, with 9% indicating it would be longer than two years.

Analysis

Knowing how long the migration will take is an important factor in determining if it is right to do for your business and when is the right time. Even if you do not plan to do it in the near term it is worth having an analysis done to determine a plausible migration schedule. We notice over half of the companies expect to get the migration done within a year.

New ever-more powerful automation tools such as Code Morph and Data Morph (offered by Macrosoft) as well as other tools offered by other vendors, can greatly help to speed up migration and significantly reduce project completion timespans. To the extent a company can devote significant resources to the testing phase of an ASP/VB migration project that will greatly help reduce project timespans.

Also, there can be a phased migration approach where certain modules or functional components of the ASP/VB application are released along the way, so a company does not need to wait till full completion to gain some of the benefits of the migration.

Conclusion

This concludes our summary of results from the State of Legacy VB6/Classic ASP - Support, Modernization and Migration in US survey during the last two weeks of March 2022.

The bottom line of the survey results, in our opinion, shows an industry in major flux, with sharp differences of views about the role of ASP/VB applications in the present technology world. That is not surprising.

From the very beginning of its life, ASP/VB has always had its strong proponents because of its tremendous power and flexibility as an application programming language. Even now 20 years later, facing significant end-of-life challenges, and with other key technologies moving forward around it, we still see in survey results participants who view ASP/VB as the language/platform of choice.

Best practice advocates and tech support vendors will have a field day in working with companies in all parts of the response curves to this survey, to assist those companies in their current use of ASP/VB applications and possible future migrations or modernization efforts.

All participants to the survey will receive this paper and will be able to compare and contrast their views versus their peers in the industry. All readers will be able to see the wide diversity of responses to fundamental questions affecting and driving the ASP/VB app. industry and where it goes from here.
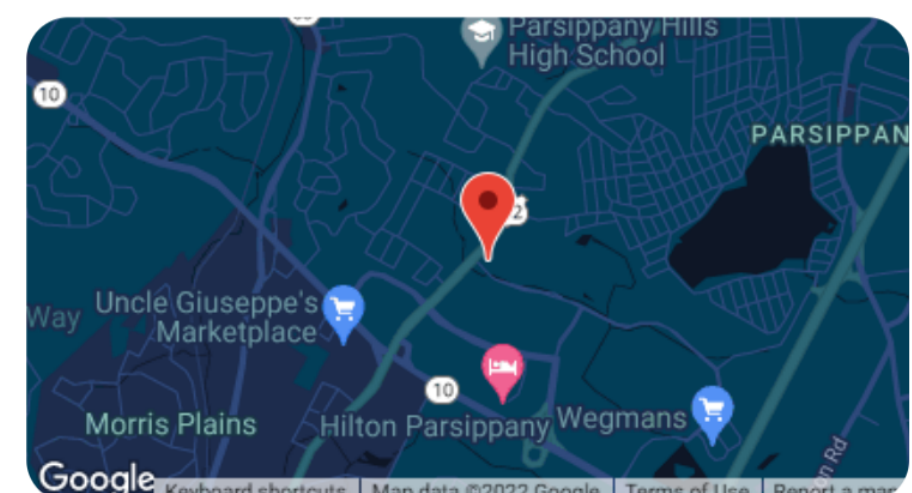
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Back to Index