



# IBM Bluemix

## Surveys

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# Executive Summary

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Bluemix by IBM is a new but growing player in the cloud software field. To help the company understand what potential stakeholders value in a cloud service, we targeted both managers involved in the decision making process for cloud software adoption as well as developers who directly interact with various cloud software. We analyzed participants' values, concerns and criteria in terms of cloud software adoption by correlating their current roles with various features of cloud services. Over the course of **9 days and with results from 124 participants**, we were able to discover some very interesting findings.

## 1. Managerial Decisions when Adopting Cloud Software

### Findings:

- Managers want peace of mind with their cloud service software.
- They care about the value of their service.
- Less than half of the individuals whose organizations find cloud software very and extremely critical to their company feel that reputation is an important aspect of a cloud service.

### Recommendation:

Bluemix needs to place higher priority on the reliability, scalability, and security of their cloud service because they are valuable to managers when considering adopting new technology. Also, Bluemix should understand that reputation is not necessarily important as managers will primarily take into account the recommendation and needs of their team members.

## 2. Developer Criteria for Adopting Cloud Software

### Findings:

- Developers present similar values as managers in terms of criteria for a cloud software.
- They also place a lot of value in easy to access and use documentation with the service.

### Recommendation:

In addition to having similar values as managers, developers strongly value documentation especially in terms of its ease of use, ease of access, and robustness. These are the criteria Bluemix should ensure that its documentation meets.

## 3. Documentation Quality

### Findings:

- Most users *first* turn to Google search to find documentation when encountering a problem with their cloud software.
- They also prefer a documentation breakdown that is highly visually appealing.

**Recommendation:**

Bluemix should make their documentation easily searchable on Google, and their documentation breakdown should be visually appealing with icons, grouping, or making the categories of documentation more easily distinguishable.

**4. Integration and Assistance****Findings:**

- Developers want high amount of control when integrating services with their application as well as in assistance with the integration process.
- They also want clear and understandable guidance as well as the ability to *opt-out* of wizard assistance at any time.

**Recommendation:**

The usability of Bluemix's service integration process should be seamless and intuitive and should cause as little frustrations for the user as possible.

**5. Competitors****Findings:**

- Unfortunately, many stakeholders do not consider IBM when they wish to adopt a new cloud software service.

**Recommendations:**

Bluemix should consolidate its position in niche market of current IBM customers and in the enterprise segment.

# Introduction

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Bluemix, a PaaS (platform-as-a-service) product, serves as a cloud-based tool for their clients to develop software with increased efficiency and collaboration. Since its inception in early 2014, Bluemix employees have worked to cultivate a relationship with end users, who mostly consist of software and web development professionals, IT professionals, and technically-oriented management of small to mid-size organizations.

We approached the task of survey design knowing that Bluemix had already designed and deployed multiple surveys to various developer groups. Therefore, we were very keen on understanding what the Bluemix team hoped to ascertain from our own survey and avoid redundancy in the surveys. This underscored our team's decision to purposefully include key demographic questions at the beginning of our survey in order to highlight potential demographic groups of users that Bluemix may have overlooked. 65 of our participants fell within the demographic of job titles and experiences that we were looking for (management or development or both).

The goal of our survey was to expand upon user interviews that we had conducted in the previous class assignment. A key recommendation from our previous report, "Interviews, Personas, and Scenarios," suggests that Bluemix should focus their user studies more on IT management and organizational decision-makers. We intended for our survey results to either validate or reveal esoteric nuances of the decision-making process for software adoption. In addition, the surveys helped elaborate on previous findings related to developers and documentation, wizard user interface, and Bluemix service integration.

# Methods

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Our team initially agreed upon a shortlist of research questions. After categorizing our research questions as either primary or secondary, we checked in with our point of contact at Bluemix, who suggested minor changes to the research questions. To elaborate, we navigated away from qualitative-type questions that were more geared for usability testing and inserted more questions with quantifiable answers. This meeting gave us more insight toward the direction of research that IBM wanted to take, which eventually guided our survey design.

Our team agreed upon the following 5 research questions:

1. Who are the potential users of Bluemix?
2. What information do users look for when adopting a new cloud service?
3. What are some user concerns with the various options of services as well as their integrations?
4. What are some examples of cloud service user interfaces users like and why?
5. In terms of user interface, what are a user's criteria for a "good wizard" and why?

We then reflected upon the key findings from our previous deliverable. We believed it was crucial to compare our interview findings with a wider breadth of user responses, which our survey affords.

1. All of our interviewees highly value documentation that is robust, easily accessible, easy to follow, and accurate.
2. Nobody really knows what Bluemix is.
3. Decisions regarding technology and software adoption are deferred to management employees.
4. Developers value software and technology that remain flexible and adaptable to current web development trends.
5. Application reliability is critical for professional use.

To write a comprehensive user survey, we took careful steps to define the user base of Bluemix. Our professor suggested further changes to our survey draft, such as clearer prioritization and ordering of survey questions. In thinking ahead to our survey analysis, we were sure to clearly designate which questions would generate better responses from either developers or management.

Next, we tested a pilot survey with five potential users to ensure that our survey remained logistically sound and that there were no technical or logical issues. After addressing all the salient issues that appeared, we reviewed our updated survey with our client at Bluemix once again, who then approved of the fourth draft of our survey.

Our primary strategy for deploying our survey involved contacting specific Meetup groups in major urban areas of the United States. These Meetup groups held a collective interest in software or web development, information technology, PaaS and SaaS (Software as a Service) discussions, and even

management IT strategies. We also worked in conjunction with our client at Bluemix in order to deploy the survey to users who more closely align with the target market for Bluemix.

Our survey was deployed in the form of a hyperlink to a Qualtrics survey, which we included along with formal assurances of data privacy and a raffling of a \$75 reward from IBM to four random survey participants. Our decision to use Qualtrics as our survey tool was motivated by the robustness and reliability of its features, especially in terms of question logic (and also because it is free to use for University of Michigan students).

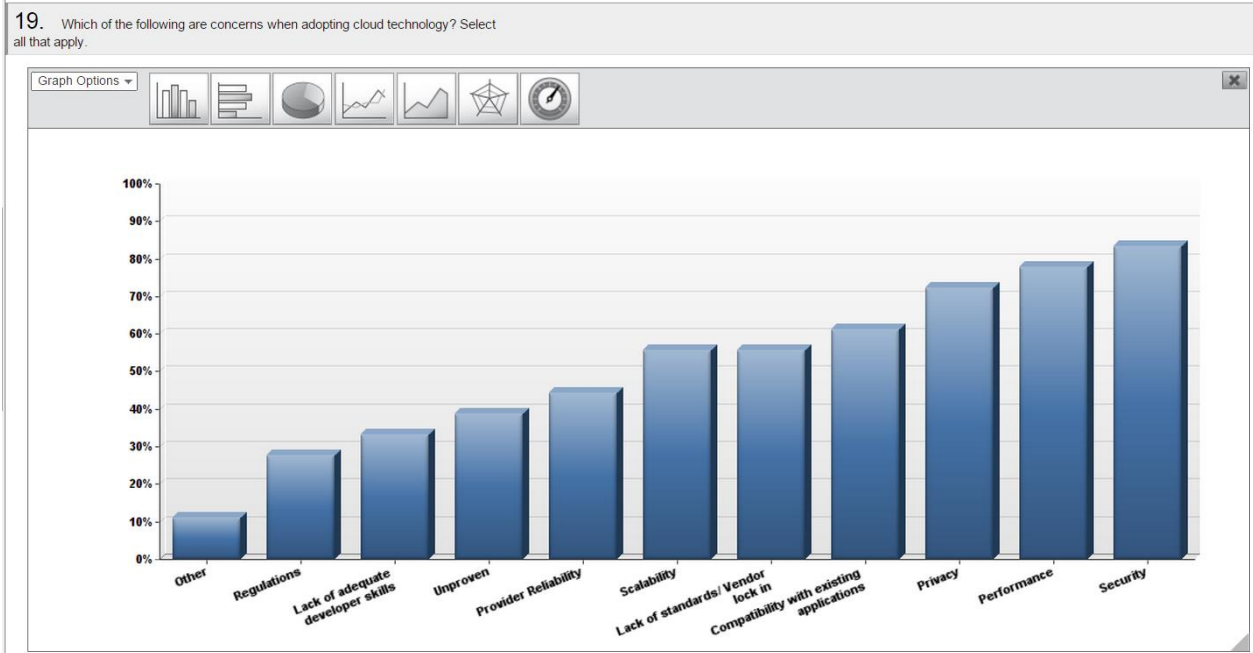
# Findings and Recommendations

## Managerial Decisions when Adopting Cloud Software

Managers decide on cloud computing adoption. Bluemix is tailored to meet the cloud service need of businesses, so we analyze interviewees with management roles (some concurrently hold development roles) who whose organizations consider cloud computing to be critical, to discover some findings that will help Bluemix to meet the business requirements of its potential customers.

### Finding 1

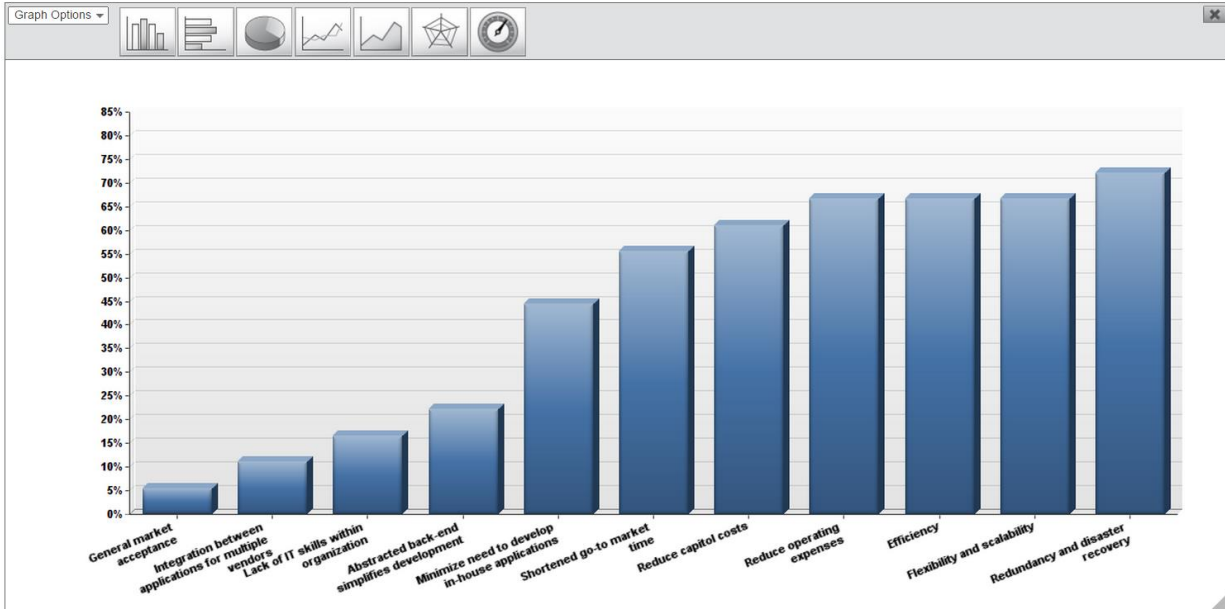
The top main concerns involved when adopting a new cloud computing software are Security (86.67%), Performance (80.0%), and Compatibility with existing applications (66.67%) (Graph 1). The most important motivators for the adoption of new cloud technology are redundancy and disaster recovery (72.22%), flexibility and scalability (66.67%), reduced operating expenses (66.67%), and efficiency (66.67%) (Graph 2). The main reasons for adopting a new cloud service include reliability of the service (87.50%), recommendation from other team members (81.25%), increased collaboration with external parties (75.00%), and usefulness of added features and services (75.00%) (Graph 3).



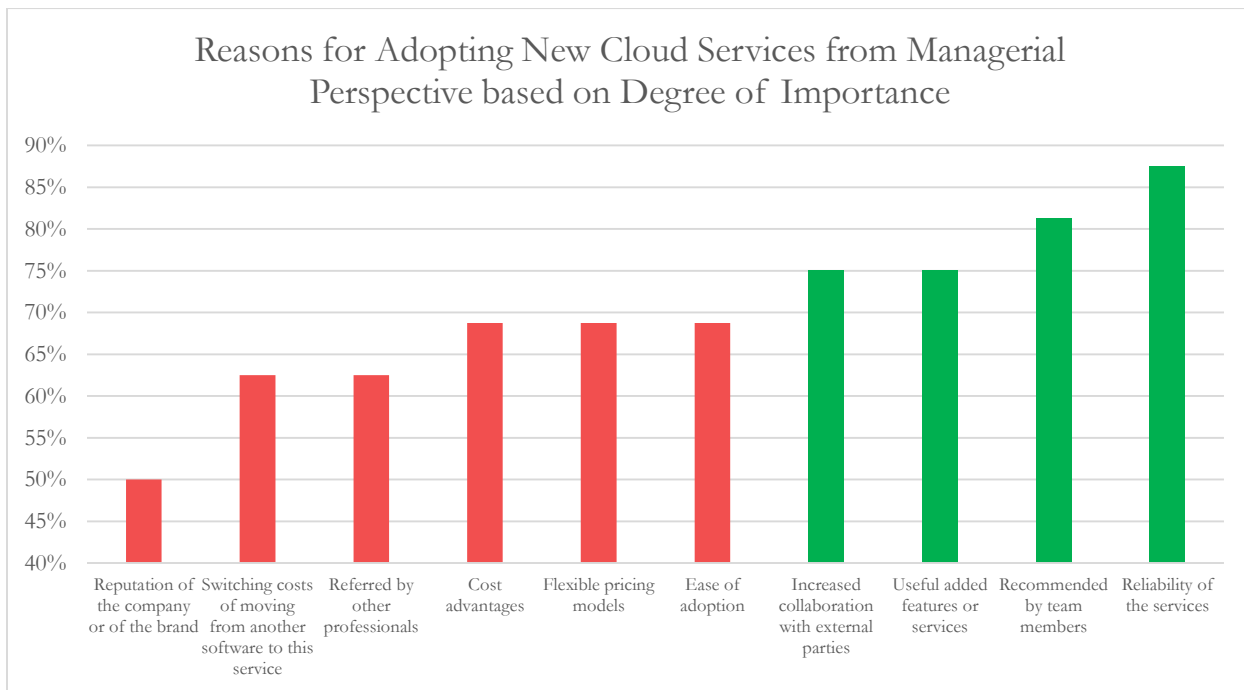
Graph 1



21. Which of the following are motivators for adopting cloud technology? Select all that apply.



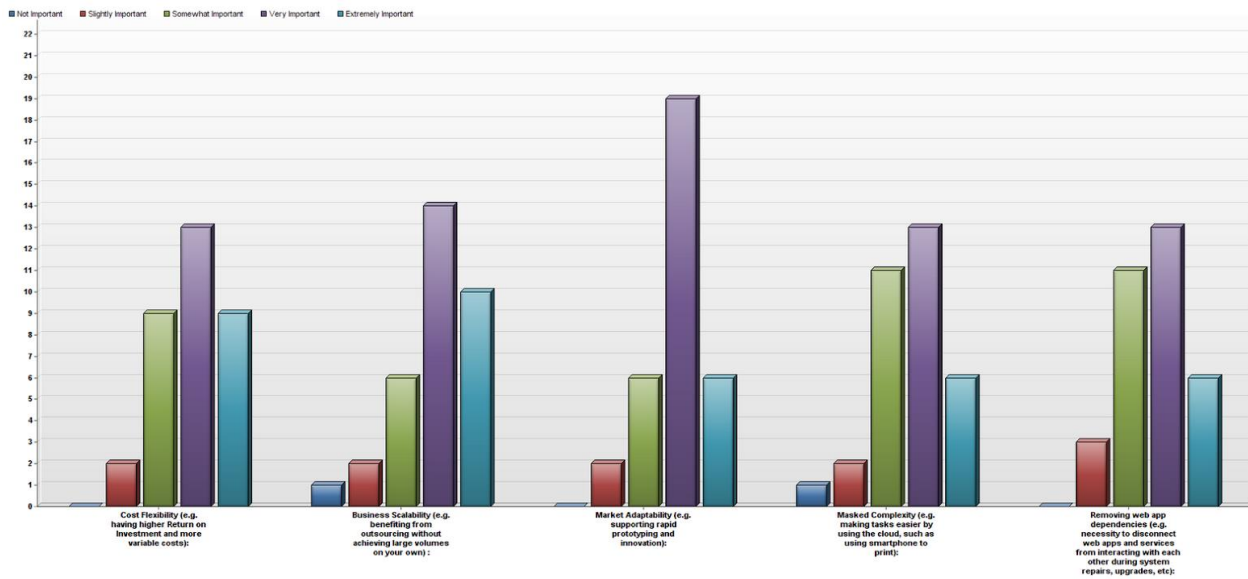
Graph 2



Graph 3

## Finding 2

For those whose organization considers cloud software to be very and extremely critical for their company, the most important aspects of any cloud service include cost flexibility (67.31%), business scalability (65.38%), market adaptability (63.46%), mass complexity (53.85%), and finally removal of web app dependencies (53.85%) (Graph 4).



Graph 4

### Finding 3

Less than half of the individuals (48.57%) whose organizations find cloud software very and extremely critical to their company feel that reputation is an important aspect of a cloud service.

### Recommendation

Bluemix needs to place higher priority on the reliability, scalability, and security of their cloud service since these are valuable to managers when considering adopting new technology. A strong disaster recovery system will also benefit the software so that managers know that their data is safe. Improving and prioritizing these aspects will also increase the value of the software and please managers who are investing a lot time and money. Bluemix should understand that reputation is not necessarily important; managers will primarily take into account the recommendation and needs of their team members as opposed to the most “popular” software in the market.

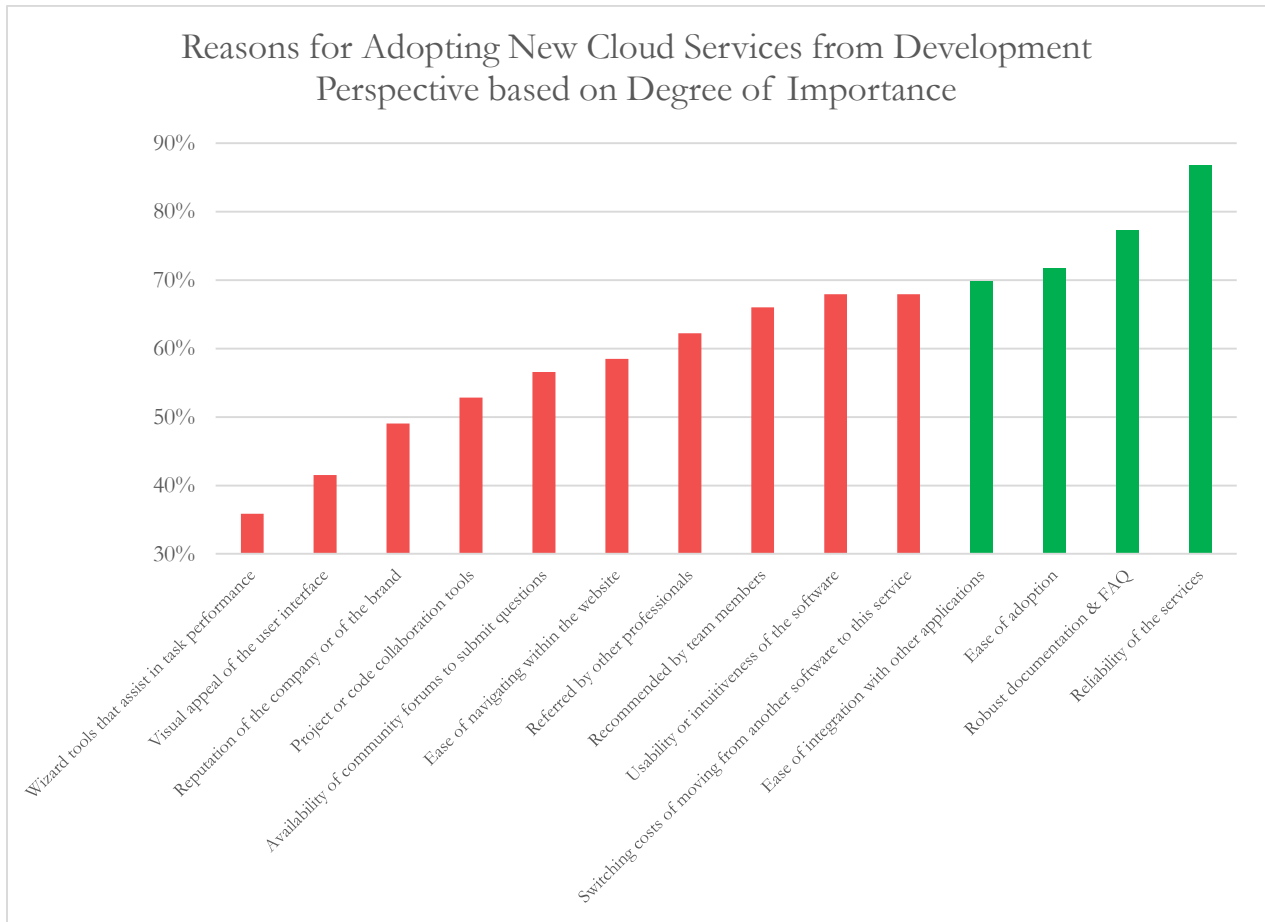
## Developer Criteria for Adopting Cloud Software

Although the decision-making power for cloud adoption usually rests in the hand of managers, the actual users of Bluemix hold development roles. We analyze interviewees who hold development roles (some concurrently hold managerial roles) to discover how Bluemix can meet the technological requirements of professional developers.

### Finding 4

For those who described their current job roles as just development as well as development and management, these are the top reasons for adopting new cloud technologies: reliability of the service (86.79%), robust documentation and FAQs (77.36%), ease of adoption (minimal requirements for a

user to adopt the software) (71.70%), ease of integration with other applications (69.81%), and finally recommendations from team members (66.04%) (Graph 4 with all choices presented for question).



Graph 5

### Finding 5

The most important items for evaluating a cloud service are stability (87.50%), security (83.93%), features (78.57%), pricing (76.69%), and vendor documentation (73.21%).

### Recommendation

In addition to stakeholders in management positions, participants who are developers also value reliability, scalability, and security of the cloud services they use, further emphasizing Bluemix’s need to highlight and improve these aspects of their software. In addition, developers strongly value documentation especially in terms of its ease of use, ease of access, and robustness. These are the criteria Bluemix should ensure that its documentation meets.

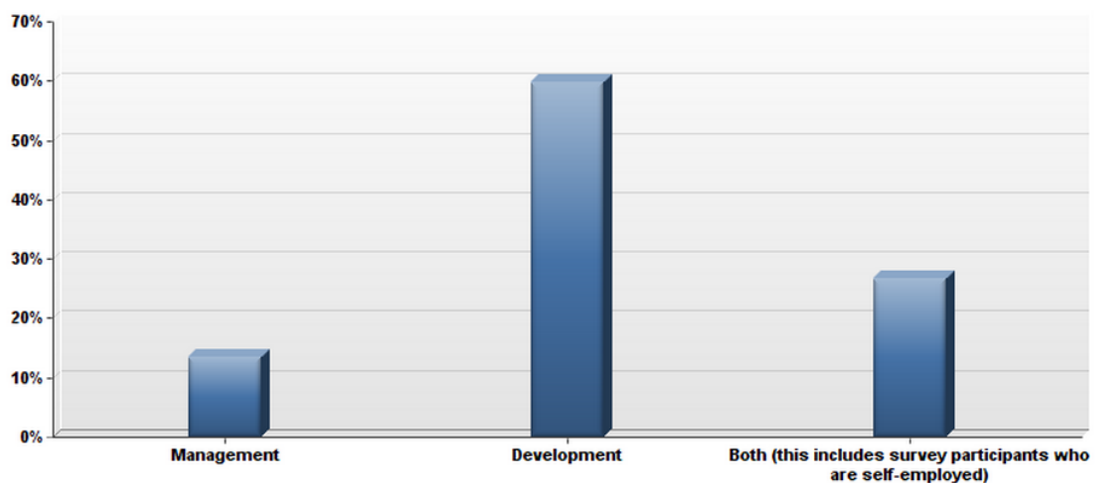
## Documentation Quality

Based on our previous finding and our user interviews, both developers and IT managers alike value high-quality and usable documentations when adopting a cloud service.

### Finding 6

For those who described their current job roles as just development as well as development and management, this is where they first look when using a new cloud service and trying to find documentation: an external search engine (Google, Bing) (55.36%), a tab within the service called “Docs” or “Documentation” (19.64%), a tab called “Support” (8.93%), and a tab called “Help” (7.14%). In addition, 80.36% of developers use Google Search when finding solutions for a new cloud service, while only 10.71% use the vendor’s documentation (Graph 6).

3. How would you best categorize your current role?



Graph 6

### Finding 7

They also prefer the breakdown of Heroku’s documentation (57.14%) versus Bluemix’s and Amazon’s user interface of documentation breakdown (both 21.43%). Users felt that the documentation does an “excellent job considering different contexts in which the product may be used.” (Image 7 or Heroku documentation breakdown UI).

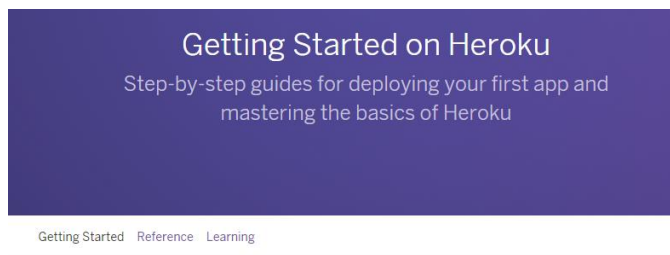


Figure 7

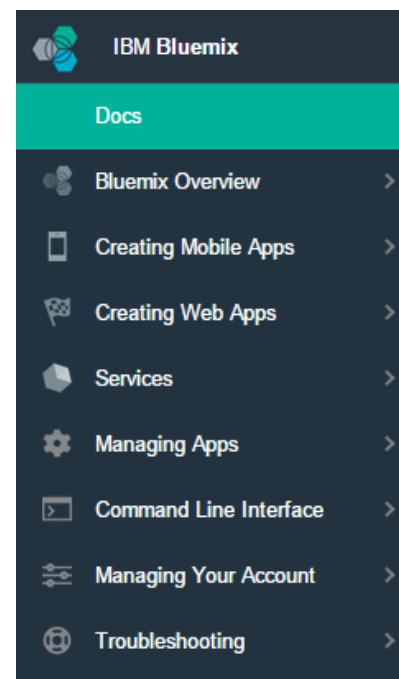


Figure 8

## Recommendation

Based on our findings, when developers are trying to find solutions for a new cloud service or find documentation when trying a new cloud service, they most often turn to Google Search. Users even mentioned that they preferred Amazon Web Services because “examples can be found via Google” and the “service is widely adopted and there are active communities blogging about it.” Google API users felt that the documentation was “extensive and easy to track from their website.” Bluemix should make their documentation easily searchable on Google. They should also make their documentation breakdown more visually appealing by using icons, grouping, or making the categories of documentation more easily distinguishable.

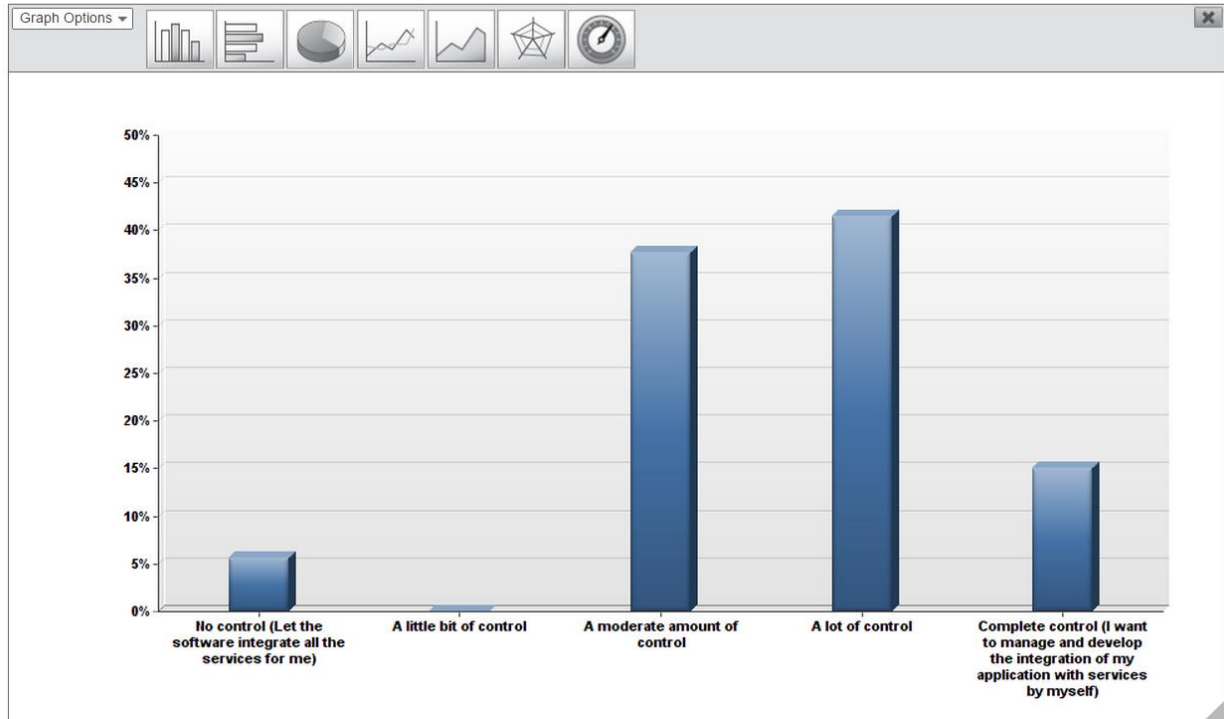
## Integration and Assistance

Bluemix offers developers easy integration of IBM and third-party services. At the same time, Bluemix uses a wizard to assist developers in using Bluemix for their professional development purposes. We analyze interviewees with development roles to see what matter to them in terms of service integration and wizard.

### Finding 8

47.17% of developers or those with development roles feel that integration of services in cloud software is very and extremely important. In terms of how much control they want when integrating services, 38.88% said they wanted a moderate amount of control, 36.67% wanted a lot of control, 15.09% wanted complete control, and 6.67% wanted no control (Graph 8)

38. How much control would you like in the integration of services with your application?



Graph 9

### Finding 9

Regarding assistance via a software wizard, these are the various levels of importance of a wizard's user interface: ability to “opt-out” of assistance from a wizard (76.92%), content of assistance feature (63.46%), and design (50.00%). Finally, these are the top three wizard features ranked based on importance: clear and understandable guidance (78.85%), freedom to move between steps and tasks (55.77%), and a sequence map of all the steps involved during wizard assistance (46.15%).

### Recommendation

The usability of any service integration process should be seamless and intuitive and should cause as little frustrations for the user as possible. Bluemix should focus on its integration process and make sure the user is presented with clear and understandable guidance as well as a freedom to accept or decline assistance with integration. In term of service presentation, the list of services should be grouped by category and the number should be minimal so that users are not overwhelmed.

## Competitors

### Finding 10

**Survey** participants selected Platforms as a Service that they have used. 64.18% chose Amazon Web Services, 32.84% chose Google App Engine, 26.87% selected Heroku, 23.88% chose Digital Ocean, 22.39% selected Azure, 11.94% selected Force.com, 7.46% chose Apache, and finally 4.48% chose Bluemix. A very small percentage of stakeholders use Bluemix compared to other PaaS services.

### Recommendation

Bluemix should consolidate its position in a niche market first, starting from among existing IBM customers, then to enterprise developers, capitalizing on IBM's reputation as a leading enterprise IT service provider. Bluemix should prioritize on improving its offering based on the needs of its target market segment and delivering services and reliability according to the expectations of the segment. Without a disruptive offering, Bluemix should not attempt to break the dominance of the leading players in the larger Public PaaS market immediately. The reliable performance and the reputation of the leading players, accompanied by the switching cost of moving from one PaaS to another will be costly to be challenged directly.

# Discussion

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## Survey Participants

Among the 93 participants who provided a valid survey response to question 3, 4% of participants are self-employed, 23% are working for startups, and 73% for enterprises. The roles span among developers, analysts, testers, architects, designers, and managers. Over 71% of responses indicate cloud computing is very or extremely critical in their organization today, over 54% responses have experience in developing a WordPress site using cloud services, and over 80% of participants use or interact with cloud services more than 2 days per week.

## Survey Distribution

Our team used Qualtrics as a medium for survey creation and distribution. We had received 124 responses, of which 64 participants completed the survey.

To recruit participants, we emailed the survey to developers and managers in software companies and also distributed the survey to specific Meetup or LinkedIn groups that fit our target audience through. These included groups based in Michigan, Columbus, Austin, Seattle, San Francisco (Bay Area), Los Angeles, Boston, Chicago, and New York.

## Statistical biases in data

In order to ensure statistically valid data, we analyzed the chi values of each category of each research question. This was mainly to test if sample data are independent from each other and that previous answers will not affect participants' decisions on following answers.

Our survey questions had varying number of responses (i.e. question responses started to trail off towards the latter half of the survey). We conducted a Sample T-test to gauge whether or not certain answers were an accurate representation of the entire population of people who attempted the survey.

## Psychology bias

Our decision to employ multiple questions featuring likert scales inevitably lead to some response biases. The perceived differences between “Not likely” and “Slight likely” may procure semantic biases from respondents who perceive more dramatic differences between “Very likely” and “Extremely likely”.

Our graphs also informed us of the possibility of acquiescence bias and social desirability bias. Survey responses suggested that some survey respondents, especially those currently holding a management role, wanted to appear more favorable to us. The reputation behind being a manager may have influenced such responses. This was evidenced by the likelihood for respondents to rank *all* the factors of cloud service adoption as very important.



## Conclusion

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Our survey results answered several of our research questions, such as, why do users choose a particular cloud service, what are users concerns with services, and how do users adopting cloud services. In addition, the survey helped identify factors important to both managers and developers.

Managers value reliability of service, recommendations from other team members, and usefulness of added features and services. Top concerns included security, performance, and compatibility with existing applications. For those whose organizations consider cloud software to be critical for their company, cost flexibility, business scalability, market adaptability, mass complexity, and removal of web app dependencies are very important factors. Developers care about reliability of service, robust documentation and FAQs, ease of adoption, ease of integration, and recommendations from team members. Developers strongly value documentation in terms of its ease of use, ease of access, and robustness.

We recommend Bluemix to place high priority on reliability, scalability, and security to meet the business needs of managers. Bluemix should make documentations easily searchable on Google, as well as provide clear and intuitive documentation. Service integration process should be seamless, intuitive, and should eliminate frustration.

## References

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[1] Flom, Peter. "The Difference Between a T-Test & a Chi Square." *EHow*. Demand Media, 14 Apr. 2011. Web. 11 Mar. 2015.

# Appendices

## Appendix A: "Qualtrics" Tables

### 4. Which of these best describes your position and responsibilities?

#	Answer	Response	%
1	<a href="#">Application Developer (Front End)</a>	47	51%
2	<a href="#">Application Developer (Back End)</a>	43	46%
3	<a href="#">Business Analyst</a>	10	11%
4	<a href="#">IT/Project Manager/Lead Developer</a>	18	19%
5	<a href="#">QA/Tester</a>	8	9%
6	<a href="#">Product Manager</a>	12	13%
7	<a href="#">Software/Solution Architect</a>	20	22%
8	<a href="#">Designer</a>	17	18%
9	<a href="#">CTO/CIO</a>	8	9%
10	<a href="#">Other</a>	6	6%

Other
Software Engineer
I was an embedded software developer for 14 years.
Owner. Design, Life dev, team management, project planning, etc
Software Validation
Researcher
UX

### 5. What is the size of the company that you currently work for?

#	Answer	Response	%
1	<a href="#">1 - 10 people</a>	20	22%
2	<a href="#">11 - 50 people</a>	15	16%
3	<a href="#">51 - 249 people</a>	13	14%
4	<a href="#">250 or more</a>	41	44%
5	<a href="#">I don't work for a company</a>	4	4%
	<b>Total</b>	<b>93</b>	<b>100%</b>

6. How would you describe the company you work for?

#	Answer		Response	%
1	<a href="#">Startup</a>		23	26%
2	<a href="#">Small to Medium Business</a>		29	33%
3	<a href="#">Enterprise</a>		37	42%
	Total		89	100%

9. What is your age?

#	Answer		Response	%
1	<a href="#">Under 18</a>		0	0%
2	<a href="#">18 - 24</a>		12	13%
3	<a href="#">25 - 34</a>		40	43%
4	<a href="#">35 - 44</a>		24	26%
5	<a href="#">45 - 54</a>		12	13%
6	<a href="#">55 - 64</a>		4	4%
7	<a href="#">65+</a>		1	1%
	Total		93	100%

11. How critical is cloud computing to your organization today?

#	Answer		Response	%
1	<a href="#">Not critical at all</a>		8	9%
2	<a href="#">Slightly critical</a>		18	20%
3	<a href="#">Somewhat critical</a>		19	21%
4	<a href="#">Very critical</a>		18	20%
5	<a href="#">Extremely critical</a>		26	29%
	Total		89	100%

13. Have you developed a WordPress site using cloud services?

#	Answer	Response	%
1	<a href="#">Yes</a>	37	54%
2	<a href="#">No</a>	31	46%
	Total	68	100%

14. How often do you..

Add Graph Add Table More...

#	Question	Never	Rarely (less than once/week)	Sometimes (1-2 days/week)	Often (3-5 days/week)	Daily	Total Responses	Mean
1	Use or interact with cloud services	<a href="#">2</a>	<a href="#">15</a>	<a href="#">10</a>	<a href="#">16</a>	<a href="#">46</a>	89	4.00
2	Use or interact with other co-workers on projects through the cloud	<a href="#">11</a>	<a href="#">13</a>	<a href="#">8</a>	<a href="#">16</a>	<a href="#">41</a>	89	3.71

12. Which of the following types of applications have you built using cloud services? Select all that...

#	Answer	Response	%
1	<a href="#">Web Applications</a>	73	82%
2	<a href="#">Mobile (Android)</a>	19	21%
3	<a href="#">Mobile (iOS)</a>	18	20%
4	<a href="#">API</a>	43	48%
5	<a href="#">Other</a>	7	8%

## Appendix B: Survey Questions

Link to Qualtrics Survey: [https://umich.qualtrics.com/SE/?SID=SV\\_bynnZpHCFcpQ6qN](https://umich.qualtrics.com/SE/?SID=SV_bynnZpHCFcpQ6qN)

“You have been invited to participate in a survey sponsored by IBM which should take about 15-20 minutes to complete. This survey is part of user research study conducted by a group at the University Of Michigan School Of Information. Your feedback will help us understand what your needs are and how IBM can improve its offerings. We will randomly select 4 participants who complete the survey who will receive \$75 USD via mail from us. Privacy Statement: Your responses will be reported in aggregated format and will not be linked to your contact information. If you decide to participate in this survey, please provide us your e-mail address (at end of the survey) to be entered into the drawing. NOTE: IBM will notify the winners of the drawing and collect some additional information to send the \$75 in the form of a check that we will mail to the winners.”

I understand. Please proceed to survey questions.

**Q1 Please enter your Job Title:**

**Q2 How would you best categorize your current role?**

- Management
- Development
- Both (this includes survey participants who are self-employed)
- Not Applicable

**Q3 Which of these best describes your position and responsibilities?**

- Application Developer (Front End)
- Application Developer (Back End)
- Business Analyst
- IT/Project Manager/Lead Developer
- QA/Tester
- Product Manager
- Software/Solution Architect
- Designer
- CTO/CIO
- Other \_\_\_\_\_

**Q4 What is the size of the company that you currently work for?**

- 1 - 10 people
- 11 - 50 people
- 51 - 249 people
- 250 or more
- I don't work for a company

**Q5 How would you describe the company you work for?**

- Startup
- Small to Medium Business
- Enterprise

**Q6 How long have you had a management role?**

- Less than 6 months
- 6 - 12 months
- 1 - 2 years
- 3 - 5 years
- More than 5 years

**Q7 How long have you had a development role?**

- Less than 6 months
- 6 - 12 months
- 1 - 2 years
- 3 - 5 years
- More than 5 years

**Q8 What is your age?**

- Under 18
- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65+

**Q9 How familiar are you with cloud computing?**

- Not familiar at all (A cloud service is an on-demand computing resource—everything from applications to data centers—that is distributed over the Internet.)
- Slightly familiar
- Somewhat familiar
- Very familiar
- Extremely familiar

**Q10 How critical is cloud computing to your organization today?**

- Not critical at all
- Slightly critical
- Somewhat critical
- Very critical
- Extremely critical

**Q11 Which of the following types of applications have you built using cloud services? Select all that apply.**

- Web Applications
- Mobile (Android)
- Mobile (iOS)
- API
- Other \_\_\_\_\_

**Q12 Have you developed a WordPress site using cloud services?**

- Yes
- No

**Q13 How often do you:**

	Never	Rarely (less than once/week)	Sometimes (1-2 days/week)	Often (3-5 days/week)	Daily
Use or interact with cloud services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use or interact with other co-workers on projects through the cloud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q14 Do you see investments in cloud application development surpassing that of traditional application development over the next five years?**

- Yes
- No
- Not Sure

**Q15 What area(s) of cloud computing is your organization engaged in today? Select all that apply.**

- Security
- Storage
- Virtualization
- Community Cloud
- Private Cloud
- Public Cloud
- Hybrid Cloud (combination of on-premise and cloud vs. cloud-only)
- Out of the box cloud applications
- Other \_\_\_\_\_



**Q16 How likely is your organization to adopt cloud applications in the following areas within the next 24 months?**

	Not Likely	Slightly Likely	Somewhat Likely	Very Likely	Extremely Likely
Security	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Storage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Virtualization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community Cloud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Private Cloud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public Cloud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enterprise and/or Mission Critical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hybrid Cloud (combination of on-premise and cloud vs. cloud-only)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hosted Applications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (if "Other" is not applicable, please select "Not Likely")	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q17 Which of the following are concerns when adopting cloud technology? Select all that apply.**

- Performance
- Scalability
- Privacy
- Security
- Unproven
- Provider Reliability
- Compatibility with existing applications
- Lack of standards/ Vendor lock in
- Lack of adequate developer skills
- Regulations
- Other \_\_\_\_\_

**Q18 Which of the following are motivators for adopting cloud technology? Select all that apply.**

- Efficiency
- Reduce capitol costs
- Reduce operating expenses
- Minimize need to develop in-house applications
- General market acceptance
- Shortened go-to market time
- Flexibility and scalability
- Redundancy and disaster recovery
- Integration between applications for multiple vendors
- Abstracted back-end simplifies development
- Lack of IT skills within organization

**Q19 How often do you use the following collaboration tools?**

	Never	Rarely (less than once/week)	Sometimes (1-2 days/week)	Often (3-5 days/week)	Daily
Email	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instant Message (IRC)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wikis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blogs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project Management Software (e.g. JIRA)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Git Hub	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Face to face	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Video Conferencing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Phone Conferencing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (if "Other" is not applicable, please select "Not Likely")	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q20 Which of the following IaaS software have you used? Select all that apply. Infrastructure as a Service (IaaS) provides companies with computing resources including servers, networking, storage, and data center space on a pay-per-use basis.**

- Amazon Web Service
- Amazon EC2
- Google Computing Engine
- IBM SoftLayer
- Rackspace
- Other \_\_\_\_\_
- Not Applicable

**Q21 Which of the following PaaS have you used? Select all that apply. Platform as a service (PaaS) provides a cloud-based environment with everything required to support the complete life cycle of building and delivering web-based (cloud) applications—without the cost and complexity of buying and managing the underlying hardware, software, provisioning and hosting.**

- Amazon Web Services
- AWS Elastic Beanstalk
- Apache Stratos
- Digital Ocean
- Force.com
- Google App Engine
- Heroku
- Bluemix
- Windows Azure
- Other \_\_\_\_\_
- Not Applicable

**Q22 Which of the following SaaS have you used? Select all that apply. Software as a service (SaaS) -- cloud-based applications run on distant computers “in the cloud” that are owned and operated by others and that connect to users’ computers via the Internet and, usually, a web browser.**

- Google Apps (Google Docs, Spreadsheet)
- Microsoft Office 365
- Other \_\_\_\_\_
- Not Applicable

**Q23 What did you like about some of the platforms that you selected?**

**Q24 What did you dislike about some of the platforms that you selected?**

**Q25 How important are the following items when evaluating a cloud service?**

	Not Important	Slightly Important	Somewhat Important	Very Important	Extremely Important
Vendor Documentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Questions and Answers (Forums)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Video (Instructional)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Demo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pricing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sample Code	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sample Application you can Fork	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Getting Started Guides	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Features	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Security	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Licensing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compatibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q26 When you are using a new cloud service and you are trying to find the website's documentation, where would you look first?**

- Go to an external search engine (i.e. Google, Bing)
- Try to find a tab called "Help"
- Try to find a tab called "Support"
- Try to find a tab called "Docs" or "Documentation"
- Try to find a tab called "FAQ"
- Go to the website's search bar
- Other \_\_\_\_\_

**Q27 Where do you go first to find solutions when encountering problems with a new cloud service?**

- Google Search
- Vendors Documentation
- Stackoverflow
- Vendor online forums
- Co-Worker
- Other \_\_\_\_\_

**Q28 You are now being presented with three examples of documentation hierarchy that appear when you are trying to set up an application. Which example of documentation organization do you most prefer?**

- Image:Screen shot 2015 03 02 at 9.28.02 pm
- Image:Screen shot 2015 03 02 at 9.28.10 pm
- Image:Screen shot 2015 03 02 at 9.28.27 pm

**Q29 Please list 1-2 cloud services which have the most useful documentation as well as reasons as to why this service's documentation is useful.**

**Q30 How important are the following reasons for adopting new cloud services? Please rate each factor's importance.**

	Not Important	Slightly Important	Somewhat important	Very Important	Extremely Important
Competitive/ Cost advantages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flexible pricing models	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Switching costs of moving from another software to this service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased collaboration with external parties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Useful added features or services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of adoption	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reliability of the services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reputation of the company or of the brand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred by other professionals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recommended by team members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q31 How important are the following reasons for adopting new cloud services? Please rate each factor's importance.**

	Not Important	Slightly Important	Somewhat important	Very Important	Extremely Important
Ease of navigating within the website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visual appeal of the user interface	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Usability or intuitiveness of the software	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wizard tools that assist in task performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of integration with other applications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of adoption	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Switching costs of moving from another software to this service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reliability of the services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project or code collaboration tools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of community forums to submit questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Robust documentation & FAQ	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Reputation of the company or of the brand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred by other professionals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recommended by team members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q32** How important are the following reasons for adopting new cloud services? Please rate each factor's importance.

	Not Important	Slightly Important	Somewhat Important	Very Important	Extremely Important
Ease of navigating within the website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visual appeal of the user interface	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Usability or intuitiveness of the software	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wizard tools that assist in task performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of integration with other applications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of adoption	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Switching costs of moving from another software to this service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reliability of the services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Project or code collaboration tools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of community forums to submit questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Robust documentation & FAQ	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reputation of the company or of the brand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Referred by other professionals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recommended by team members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased collaboration with external parties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Useful added features or services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Switching costs of moving from another software to this service (i.e. financial, resources, work hours)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flexible pricing models	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost advantages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q33 How important was the ability to choose which services you could integrate with your application?**

- Not Important
- Slightly Important
- Somewhat Important
- Very Important
- Extremely Important

**Q34 How many services do you think is a good amount to be presented with?**

- 1 - 20 services
- 21 - 40 services
- 40 - 60 services
- 60+ services
- Other (please specify) \_\_\_\_\_

**Q35 How much control would you like in the integration of services with your application?**

- No control (Let the software integrate all the services for me)
- A little bit of control
- A moderate amount of control
- A lot of control
- Complete control (I want to manage and develop the integration of my application with services by myself)

**Q36 How important are these aspects of cloud services?**

	Not Important	Slightly Important	Somewhat Important	Very Important	Extremely Important
Cost Flexibility (e.g. having higher Return on Investment and more variable costs):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business Scalability (e.g. benefiting from outsourcing without achieving large volumes on your own) :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Market Adaptability (e.g. supporting rapid prototyping and innovation):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Masked Complexity (e.g. making tasks easier by using the cloud, such as using smartphone to print):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Context-Driven Variability (e.g. having a user centered experience, such as a natural language assistant):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ecosystem Connectivity (e.g. bringing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<p>benefits to suppliers, partners, customers, and external players):</p> <p>Interface Customizability (e.g. being able to drag/drop or re-order panels, toolbars, etc):</p> <p>Removing web app dependencies (e.g. necessity to disconnect web apps and services from interacting with each other during system repairs, upgrades, etc):</p>	<p>○</p> <p>○</p>	<p>○</p> <p>○</p>	<p>○</p> <p>○</p>	<p>○</p> <p>○</p>	<p>○</p> <p>○</p>
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**Q37** “A software wizard or setup assistant is a user interface type that presents a user with a sequence of dialog boxes that lead the user through a series of well-defined steps. Tasks that are complex, infrequently performed, or unfamiliar may be easier to perform using a wizard.”

**Q38** How important are the following aspects of a software wizard’s user interface?

	Not Important	Slightly Important	Somewhat Important	Very important	Extremely Important
Content of assistance feature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Design of assistance feature:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to opt-out of wizard assistance:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An avatar associated with the wizard:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q39** How would you rank these features based on importance with the first being most important?

- \_\_\_\_\_ Clear and understandable guidance
- \_\_\_\_\_ Freedom to move between steps of a task (flexibility)
- \_\_\_\_\_ Sequence map (detailed progress bar) of all the steps in the Wizard
- \_\_\_\_\_ Save your progress and continue later
- \_\_\_\_\_ Minimal number of steps
- \_\_\_\_\_ Intuitive naming of steps
- \_\_\_\_\_ Explanation of process and purpose at each step

**Q40** Thank you for participating in our survey! If you would like to enter your name into a drawing for a monetary prize, please provide us with your first and last name as well as email address. As a reminder, we will randomly select 4 participants and each of the 4 participants will receive \$75 USD via mail. Thanks again for your time!

First Name:

Last Name:

Email Address: