Experiences with Software-as-a-Service (SaaS) Technology in the Life Sciences Industry

Results and evaluation of a survey conducted by C3i, Inc.

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Executive Summary

In the dynamic landscape of clinical trials, important changes in customer preferences, technology deployment, and contractual sourcing relationships are obvious even to casual observers. Still, use of some technologies in that market is at an early stage. Business models are still unsettled—a challenge for key decision-makers to see patterns on which to base strategy for marketing and other key functions. In this setting, information from users of the new technologies should be useful to gain an understanding of current implementations, benefits, and concerns.

We surveyed users of electronic data capture worldwide to help understand their experiences with on-demand and software-as-a-service technology.

C3i surveyed customers of electronic data capture worldwide in pharmaceuticals and related businesses to update our understanding of their experiences with on-demand and software-as-a-service (SaaS) technology, clarify their uses, and their needs for the near future. Our survey is clearly not designed for statistical hypothesis testing, and we do not claim validity or generalizeability beyond the population of our respondents. Instead, it is designed to give us a current profile of our respondents, and to provide practical insights for future decisions.

There could be a strong tendency among software and service customers to rely on familiar routines. They rely on the practices that have worked well in the past, and even expand and to try to improve on them. In a dynamic market, it means reticence to substitute new technology and new business models for familiar ones. Providers must not only show the value of their new solutions, but persuade users to move away from familiar processes. Data on return on investment (ROI) or total cost of ownership (TCO) data early in implementation are important but scarce. Concerns regarding data assurance and even control of operations may be a significant barrier for customers who are relatively satisfied with their current solutions, and who are oriented to maintaining security of their proprietary information. Cost of validation is another challenge to adopting new solutions. It can cause pharmaceutical companies to be risk-averse and to adopt innovations much more slowly than is technically feasible. It’s not unusual for new software releases to be in the market for months or even years before significant customer acceptance. Stage in the development process may also play a role, as there is risk to data security and the validity of results to change parameters, to include technology, during any trial.

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Our research uncovers patterns in the ways customers currently use on-demand and SaaS technology. By comparing results of our research with existing practices, we can uncover some important issues. Findings suggest that vendors may be able to take some simple but important steps to meet the needs of customers. In the following sections, we describe respondents to our survey, and report summaries and observations on their answers.

Survey Participants

Vendors may be able to take some simple but important steps to meet the needs of customers.

Respondent Profile

The profile of our respondents reflects the diversity of customers in the market. (Figure 1) Most (47%) worked for sponsors and the next largest group (31%) worked for a contract research organization (CRO). Regarding geographical distribution, almost half (49%) of the respondents were based in the US. European countries followed in representation, then the Middle East and Asia. (Figure 2) We were impressed to uncover only small differences across regions in regard to several of our questions.

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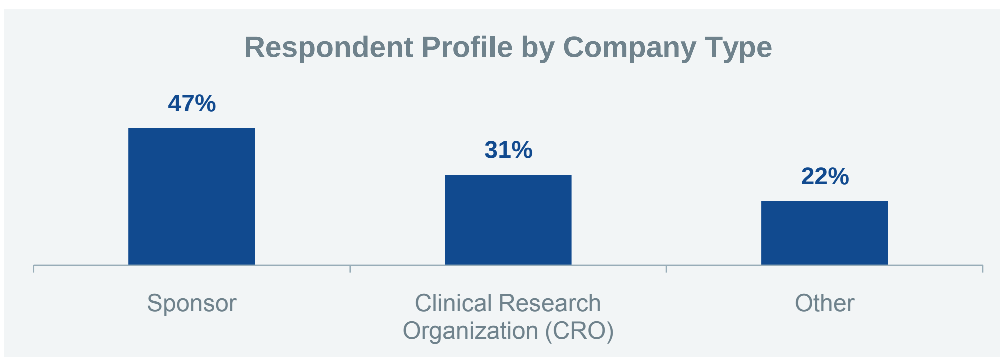

FIGURE 1

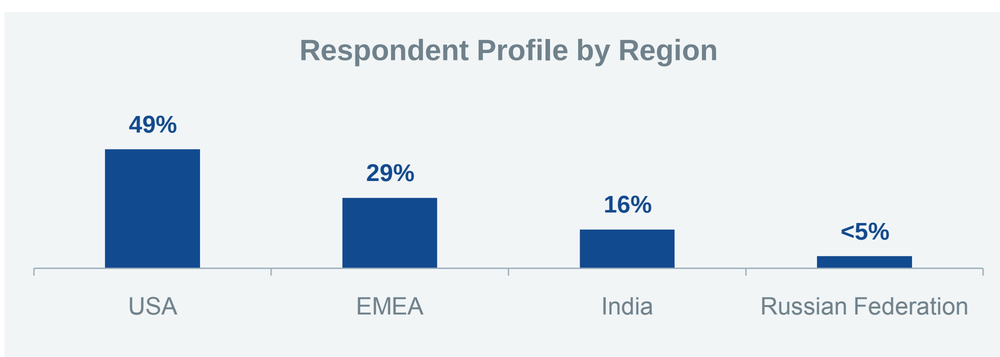

FIGURE 2

User Experience and Satisfaction

Customers differed in their experience with various kinds of clinical software. EDC is the mostly commonly used application with almost 80% of respondents. Clinical trial management was second at 50%, Thesaurus/Coding third with 37%, and safety last at 22%.

Experience with various kinds of clinical software demonstrated some differences in customers' responses.

We queried respondents regarding their experience with on-demand or SaaS clinical software in the same uses as the previous question. The differences were obvious. While the number of respondents was almost identical (86 v 85), over 40% had no experience with on-demand or SaaS software, compared with only 7% who had no experience at all with clinical software. (Figure 3) In brief, approximately 33% of respondents were experienced users of clinical software, but not of on-demand or SaaS formats. It leads us to see a potential market opportunity in converting some current clinical software users to newer formats. A deeper look into the reasons for the difference is warranted. We start in that investigation with some of the responses and comments to follow.

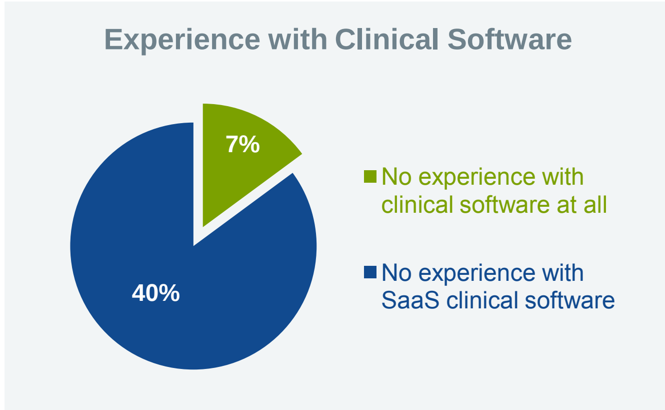

FIGURE 3

The largest group (48%) of respondents to our question regarding satisfaction with on-demand or SaaS replied it was good or outstanding. Poor or very poor experiences amounted to just under 3%. (Figure 4)

FIGURE 4

Potential Value and Concerns

There was broad consistency in the proportion of respondents regarding the importance of 10 potential value sources that we identified from on-demand or SaaS clinical software. All of our value sources were rated Important or Most Important by at least 50% of respondents. The smallest portion (51%) was for “Small upfront investment.” In contrast, the largest portions of respondents told us that “Quality” (98%), “Software validation” (95%), “End user ease-of-use” (92%), and “Security” (90%) were either Important or Most Important. In the middle range of respondents’ importance were several more value sources. They include “A single predictable subscription fee…” 73%), “Total cost of ownership” (74%), “Vendor reputation” (82%), “Rapid deployment” (87%), and “Uptime” (89%). (Figure 5) Considering responses to other questions, the remarkable feature here is the relatively high incidence of replies of importance among all characteristics. While vendors can make some important distinctions among characteristics whose value is important to users, all appear to have a non-trivial impact on users’ perceptions.

Almost three out of four respondents rated their experience with Electronic Data Capture (EDC) as good or outstanding (75%).

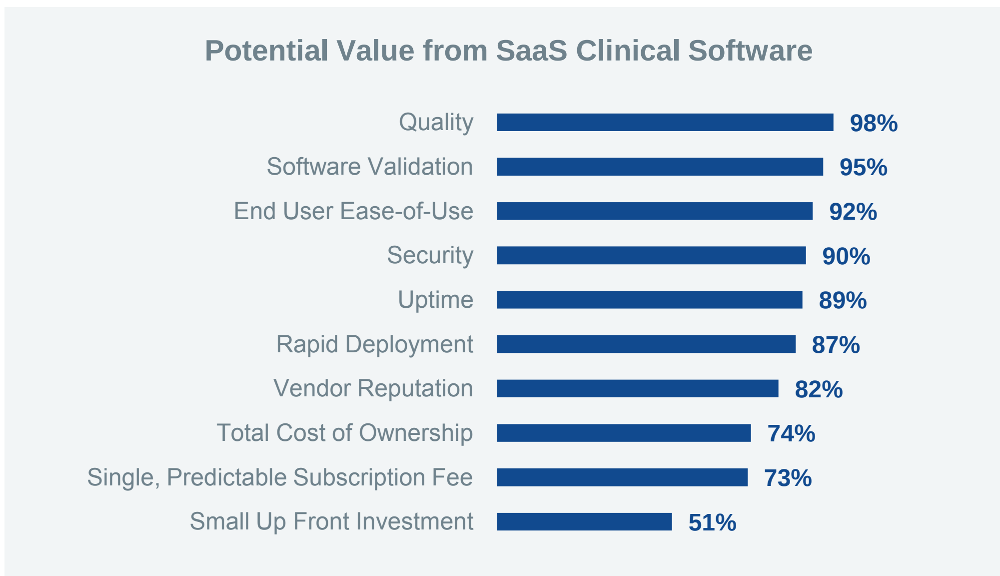

FIGURE 5

Almost three out of four respondents rated their experience with EDC as good or outstanding. Still, that 75% is slightly below the portion of experienced respondents who reported at least a good experience with Safety (78%) using 'on demand' or 'Software-as-a-Service' (SaaS) clinical software. Respondents rated their experiences much stronger for Thesaurus/Coding (87%), and Clinical Trial

Management (87%). That said, almost three times as many respondents had experience with EDC as with the next most popular use.

We noted high levels of concern for data security from respondents among all applications, but especially for EDC. It drew the largest number of respondents, half of whom were very concerned about data security. On the other hand, higher proportions, but of fewer respondents, were very concerned about data security in Safety (67%), Thesaurus/Coding (62%), and Clinical Trial Management (57%).

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When potential customers consider on-demand or SaaS, several different dimensions of the offering might cause concern. We asked about seven that could be prominent (Figure 6). “Software validation” captured the largest potion of “concerned” and “very concerned” ratings at 93%. “Control” and “Data security” followed at 86% and 85% respectively. Three others clustered at about two-thirds: “Cost” (77%), “Extensibility/Scalability” (75%), and “Ability to customize” (71%). “Physical location of servers” was much less an issue for respondents at just 32% combined “concerned” and “very concerned.”

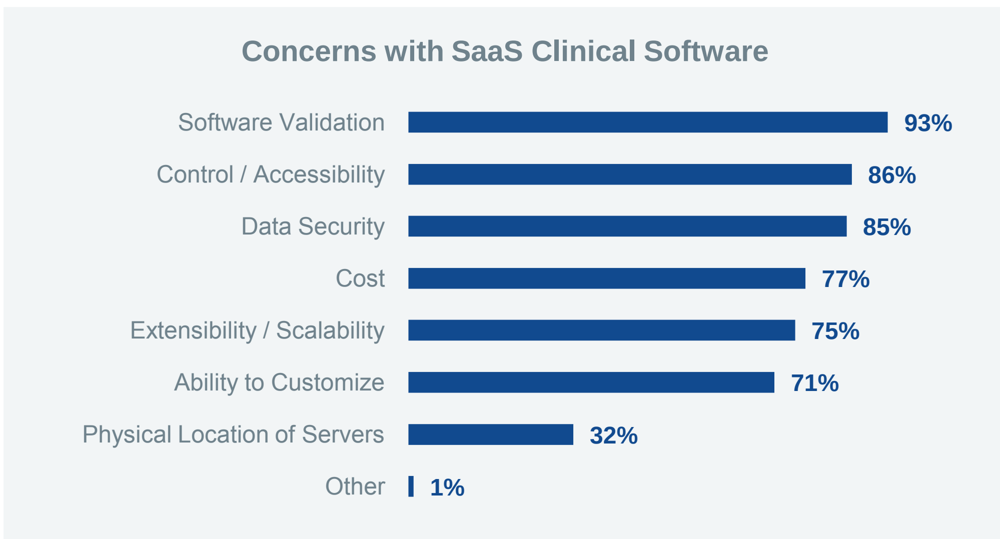

FIGURE 6

Our findings emphasize the position of EDC as an application that commands significant attention, both for its potential to create value in the market, and for the uncertainty surrounding its use.

Our findings for both questions emphasize the position of EDC as an application that commands significant attention, both for its potential to create value in the market, and for the uncertainty surrounding its use. Data security is a good example. We found highest satisfaction for EDC in terms of numbers of responses. At the same time, we see most concern, as indicated by number of responses, for data security in EDC.

Regional Differences

For deeper analysis of possible global trends, we grouped respondents according to country of origin into the following several regions: US and Canada, EMEA (EU Countries & Kuwait, Israel, Uzbekistan), Russian Federation, and India. The most obvious, although not especially surprising, result was the distribution of responses among regions. (Figure 7) Almost half were based in the US (49%), followed by EMEA (29%), and India (16%).

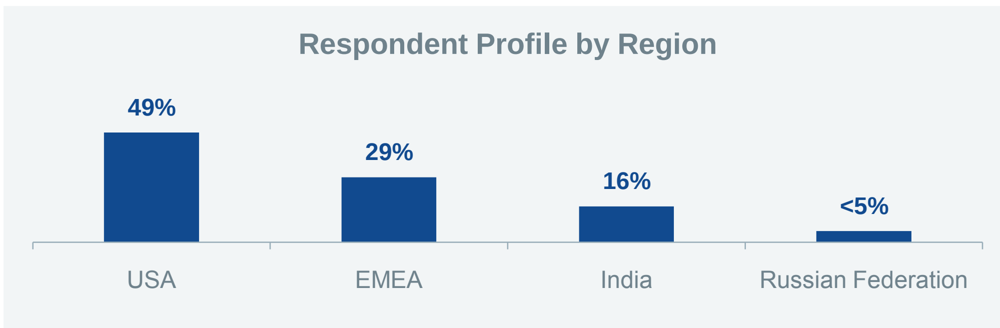

FIGURE 7

Responses to our question on satisfaction with on-demand or SaaS showed consistency across the worldwide geographical regions.

Responses to our question on satisfaction with on-demand or SaaS showed consistency across the worldwide geographical regions. A few respondents in each rated their satisfaction as poor. Most (about 40% region-to-region), however, answered that their satisfaction was good or outstanding. Overall, we observe that differences in experience and satisfaction results are relatively few across regions. The survey did not ask the reasons for satisfaction, so it is only possible to speculate regarding attributions.

Our consistent finding could result from similar sourcing and support globally by suppliers, regardless of location. There was some diversity when we observe variation within region. With the exception of the Russian Federation, each of the regions had a respondent to rate their experience as poor or very poor, even while most responses were at least good.

Types of Services Important to Users

Looking toward potential future patterns, we asked respondents which on-demand or SaaS services would be important when considering EDC software. We observe a broad diversity of factors that were either "important" or "most important." It could point toward a user base that is diverse in terms of needs.

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A wide range of services is prominent to a major potion of our respondents. We also anticipate that users might look for services that meet expectations on multiple dimensions. It is potentially a demanding market for providers, where their service offerings might be expected to create value on several, if not all, of our dimensions. Among them, "security" (90%), "end user ease-of-use" (92%) and "software validation" (95%), and "quality" (98% %) captured the highest portions of "important" or "most important" ratings. Next in importance were "rapid deployment" (87%) and "uptime" (89%). Less important, but still prominent, were "single, predictable subscription fee…" (73%), "total cost of ownership (74%), and "vendor reputation" (82%). Only "small upfront investment" drew rating of "important" or "most important" from fewer than 51% of respondents. (Figure 8)

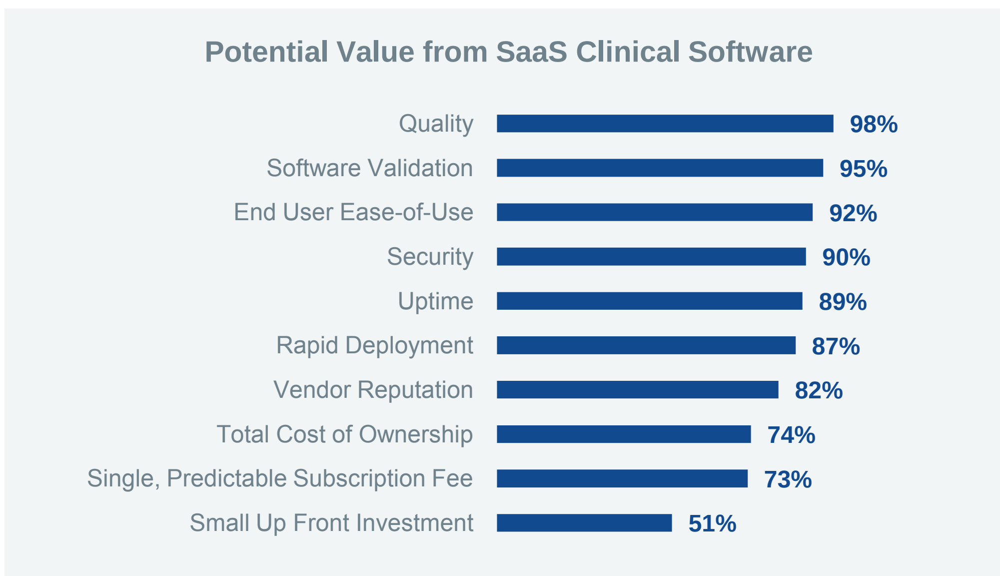


FIGURE 8

Our focus on the future of EDC led to another question. We wanted to pinpoint the types of on-demand or SaaS services most important to potential users. It could help to profile services that create most value in the near term. Specific services could be a basis for developing relationships and anticipating further needs. They could also be a start to create durable value creation and competitive advantage. We note that smaller portions of respondents rated these uses as “important” or “very important” compared with those rating factors that would affect their use of on-demand or SaaS services. The differences potentially indicate that features of these services are more prominent to users than are specific applications. However, we also note that no use attracted less than a 50% combined “important” or “very important” rating.

The uses highest in terms of importance among respondents were “study start up” and “rapid deployment,” both at 82%. Near in importance were “24x7 helpdesk” (80%), “custom reporting” (76%), “web-based user training” (75%), and “user administration” (72%). (Figure 9)

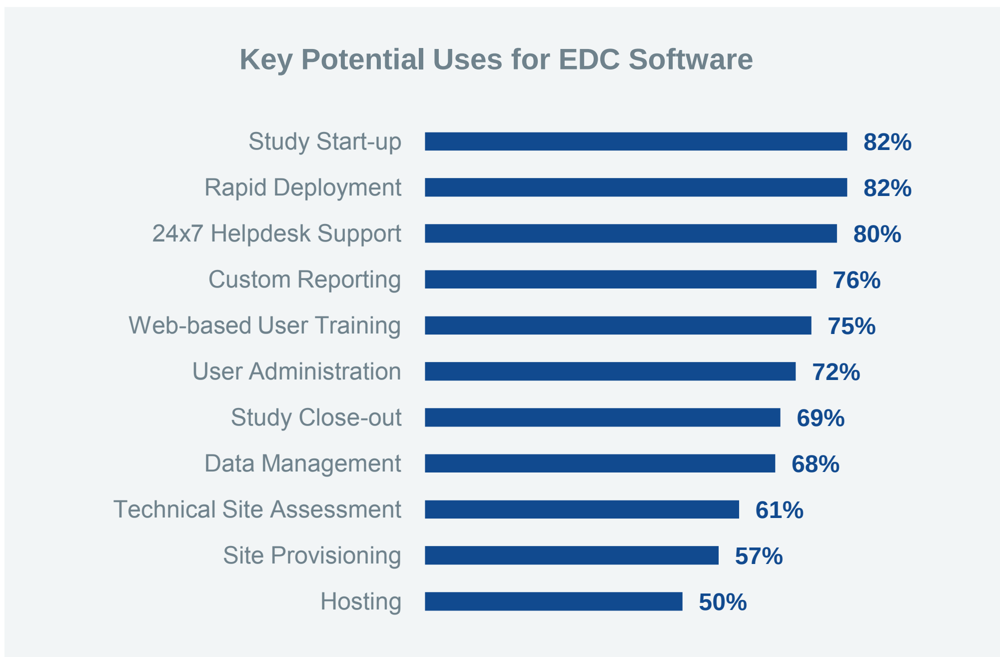


FIGURE 9

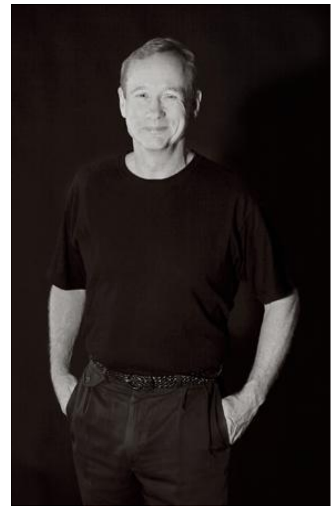
Five of the use categories drew combined importance ratings of less than 70%. The ratings for “data management” (68%), and “study close out” (69%) fell into a mid-lower cluster among all 10 of the uses in this question. The lowest ratings were assigned to “site provisioning” (57%) and to “technical site assessments” (61%). “Hosting” captured just a 50% combined “important” or “very important” rating. (Figure 9.)

Conclusions

Pharmaceutical clinical trials are the focus of dynamic technological change.

Our survey points out both needs and options for on-demand and SaaS. Pharmaceutical clinical trials are the focus of dynamic technological change. Yet, innovation is one of several conflicting forces. We also see reluctance to adopt technologies by decision-makers whose professional orientation emphasizes caution and risk avoidance. The broad challenge for providers is to facilitate a fit among technology, its functionality in actual application, and the perceptions of potential users.

About the Author



Mike Lawless joined the R H Smith School of Business faculty at the University of Maryland in 2007. His research and consulting practice emphasize Strategy, Managing Technology and Innovation, and New Ventures. He was previously a professor at Duke University and the University of Colorado and has been a visiting professor at INSEAD, UCLA, Dartmouth, Wake Forest University, and Warwick University, UK. His MBA and PhD are from UCLA.

Through his company, Michael Lawless, Inc., Mike helps clients with competitive analysis, business launches, new product development, innovation management, change management, leadership and entrepreneurship.

Mike's research is on the evolution of organizations, effects of technological change on markets and organizations, innovation within organizations and entrepreneurship. His work has been supported by the National Science Foundation. He has published many articles in academic and practice journals, edited two series of research volumes, and written a book on managing technology.

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About C3i

C3i's outsourcing services helps the healthcare industry dramatically improve technology usage while lowering the total cost of customer relationship management environments. Only C3i provides a complete portfolio of systems integration, technology training, multilingual help desk, asset management, hardware provisioning and technical site assessments exclusively tailored for the needs of healthcare professionals.

C3i has global operations centers in Europe, India and the United States. For more information, please visit C3i's website at www.c3i-inc.com.