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iLab Solutions
Save money. Save time. **Accelerate research.**

The 2015 Core Facility Benchmarking Study

Conducted by iLab Solutions

September 16, 2015

For additional information, please contact iLab Solutions at
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Introduction

iLab Solutions conducted its 5th annual Core Facility Benchmarking study in February of 2015. There were over 260 responses, representing over 50 different core types from 160 institutions. The surveyed individuals directly manage core facilities, service centers, shared resources, and recharge centers at hospitals, universities, and research institutions. For this report, "core" is the general term used when referring to all of the aforementioned facility types.

This study is conducted annually in an effort to provide a better understanding of how core facilities operate, focusing on core growth and utilization, as well as the common challenges core managers face today.

- Of those surveyed, 51% of cores experienced growth in the number of customers in 2014; this is a 3% lower growth rate than in 2013.
- In 2014, 52% of core income came from customer revenue, the same as last year; revenue from institutional support was 29%.
- In 2014, core managers said they spent approximately 43 hours per month serving the customer, whereas they only spent about 15 hours per month on independent research. This is 10 hours less for each task compared to 2013.
- In 2014, managers who used electronic systems for administrative tasks spent an average of 5 and half hours (over 11%) less per month on these activities compared to those who use other means, such as manual entry and spreadsheets. Administrative tasks included tracking equipment usage, billing and invoicing, creating usage reports, managing budgets, and tracking workflow.
- 89% of cores charge different prices for varying customer types (e.g., internal, external, corporate); this is a 5% increase compared to last year's survey.
- As with previous years, in 2014 most services performed by cores were for internal customers (68%); however, this number has decreased by about 8% from the previous year. The numbers for external academic customers remained nearly the same (11%), whereas work for those with special academic relationships and external corporate customers continue to rise (14% and 7%, respectively).
- Of cores surveyed, 64% said they adjust their rates annually, 28% adjust their rates at other time increments, and 8% said they have never adjusted their rates.
- 49% of cores said there was no tenure for core personnel at their institution, 29% said core directors have tenure, 10% said core managers have tenure, 6% of cores surveyed said technicians have tenure, and another 6% reported having other personnel eligible for tenure.
- The average number of customer labs served in 2014 is 7.62 per core FTE, down from 10 in 2013.

- The following were cited as the top challenges for core managers:
    - Acquiring funding & managing the budget
    - Managing workload and having enough time to get the work done
    - Increasing the core's utilization

  These top challenges are very similar to last year's identified challenges.

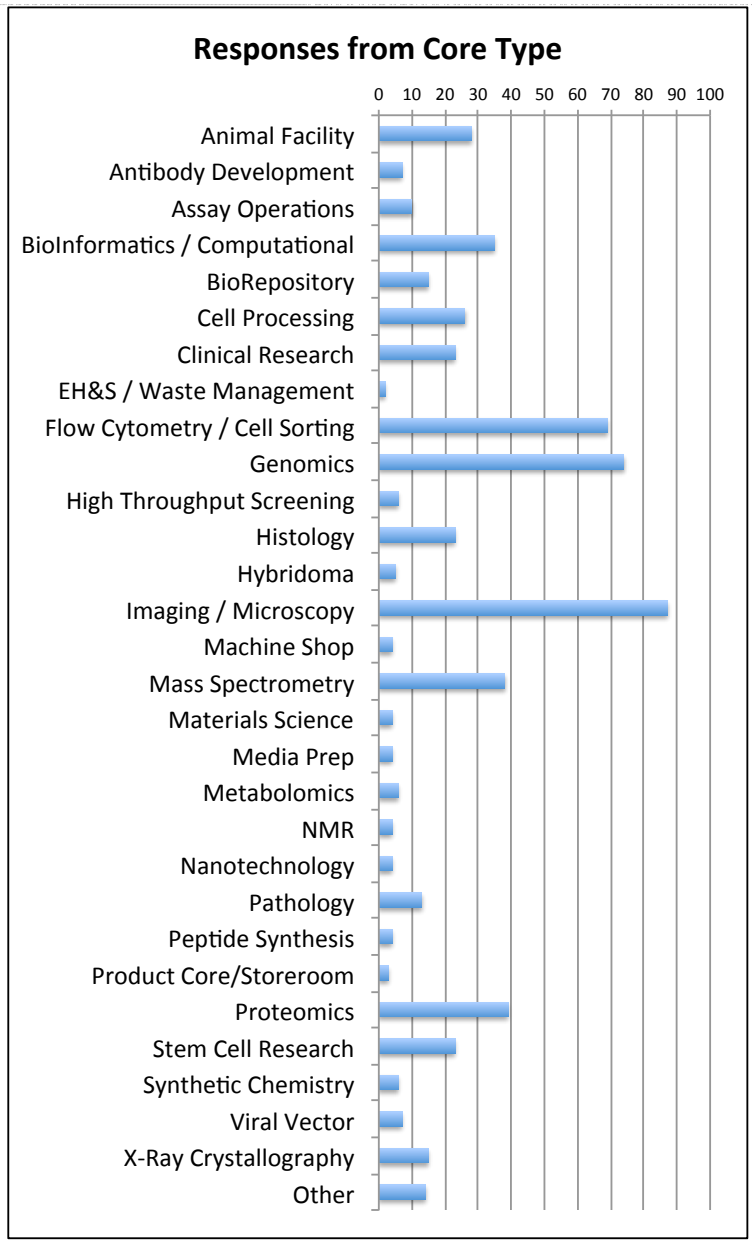
  Additional challenges mentioned involve addressing questions from the administration, customer management, equipment management, institutional support, personnel management, customer recruitment, proper resources, compliance, and staying relevant.

The following pages provide an analysis of the data collected.

Distribution

iLab distributed the survey in early February, 2015 to core managers and directors at hospitals, universities and research institutes. During this time, iLab also distributed the survey through press release listing sites, social media sites, and its corporate website. Furthermore, institution administrators who became aware of the survey sent the survey to their institution core managers. The survey was open for 12 weeks. All data was compiled and the averages are presented in the following pages. The conclusions presented here may not represent any single core.

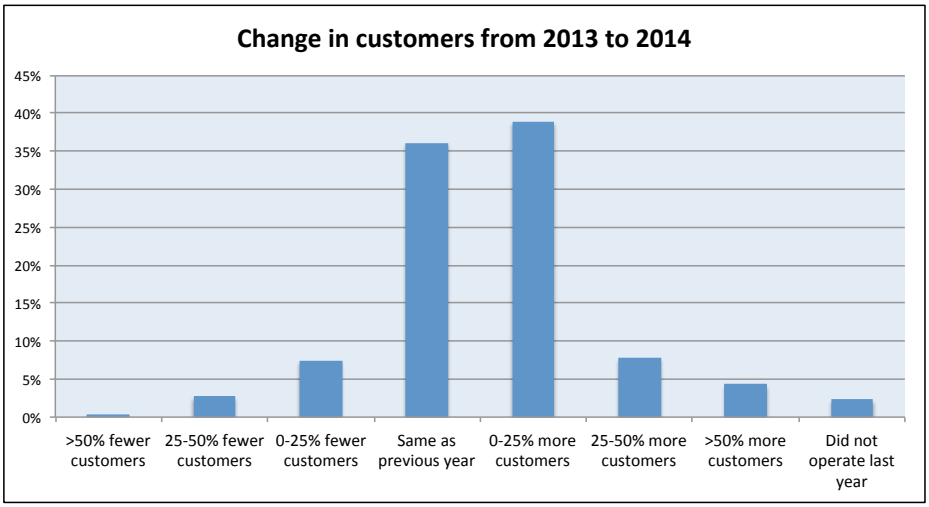
In total, **265 core managers and directors responded to the survey**. These individuals come from **160 different institutions** throughout the North American, European, and Asia Pacific regions and represent **over 50 core types**[1]. 41% of respondents said they either manage cores with multiple foci or manage multiple cores, a 5% increase from last year's survey. In these cases, the responses were only counted one time for the overall survey analysis.



[1] "Other" includes cores such as Accesioning, Biocontainment, Equipment Management, Health Communication, Health Science Education, in vivo Preclinical Studies, Instrument Shop, Machine Shop, Microbiome Analysis, Molecular Biology, Optical Engineering, Protein Production and Biophysical Analysis, Radiation Lab, and Supply Center.

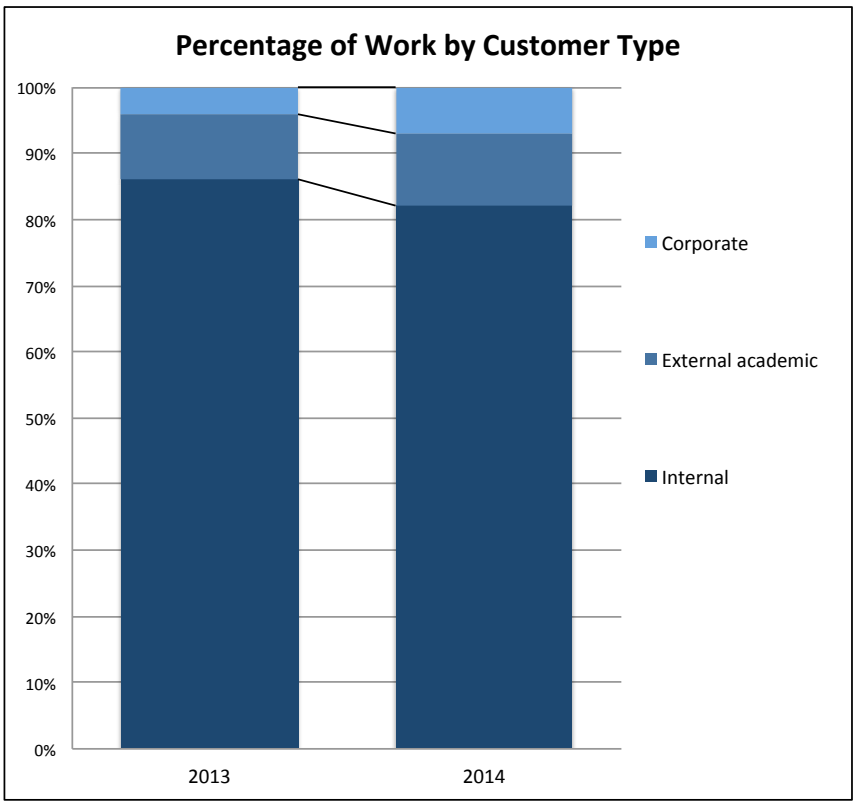
Results of Multiple Choice and Quantitative Questions

CUSTOMER GROWTH

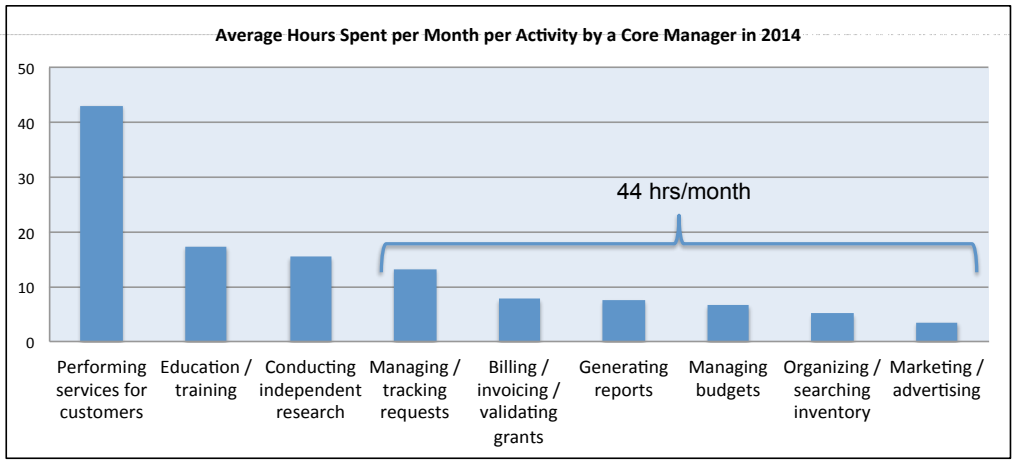


Customers: 51% of cores experienced growth in the number of customers in 2014; while 10% served fewer customers. While this growth is significant, it is the lowest rate of growth since the study's inception in 2011.

CHARGING & CORE ACTIVITIES



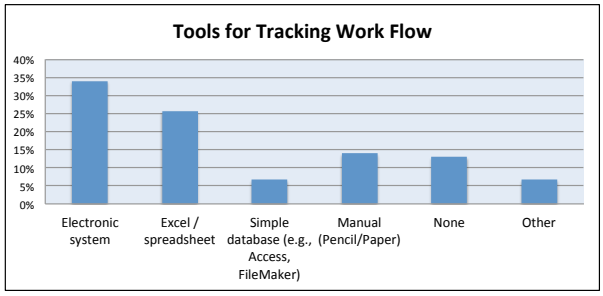
Customer Type: Cores most commonly serve customers internal to their institution. On average, internal customers represented 82% of the work performed in 2014 – **this is 4% lower than the previous year**. The numbers for external academic customers remained nearly the same (11%); whereas, work for those customers with special academic relationships and external corporate customers have increased (14% and 7%, respectively).

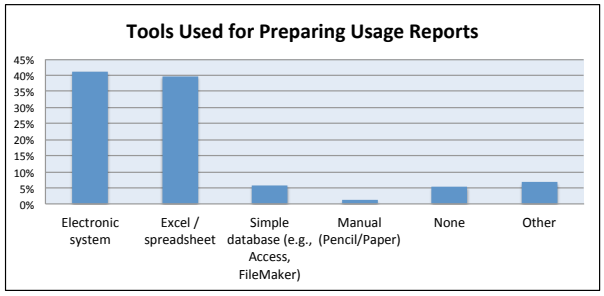


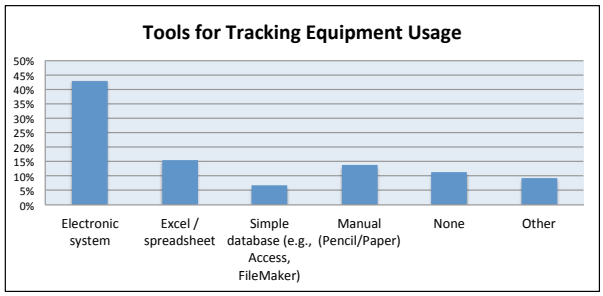
Time Spent: In 2014, Core managers reported that in 2014 the majority of their time was spent on conducting services for customers (43 hours per month). This number, along with the other tasks listed, is consistent with previous years.

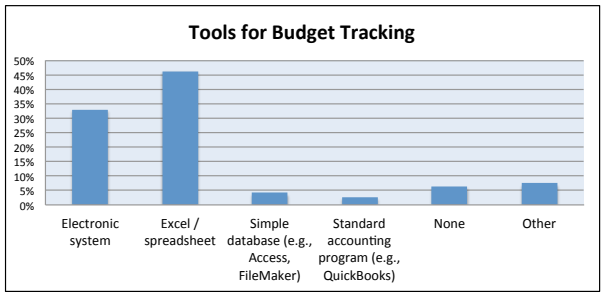
OPERATIONAL TOOLS & UTILIZATION

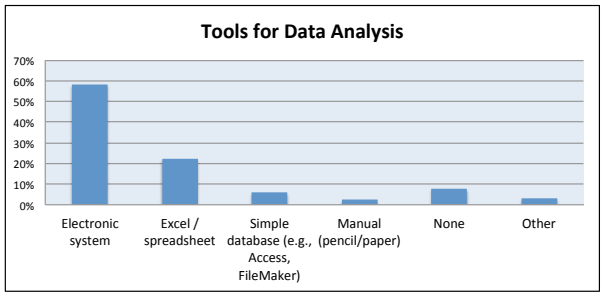
Business Tools: An electronic system is the most common tool used for tracking equipment usage and billing and invoicing. Spreadsheets are most commonly used for managing budgets and preparing usage reports, and both electronic systems and spreadsheets are frequently used for tracking workflow within the core facility.

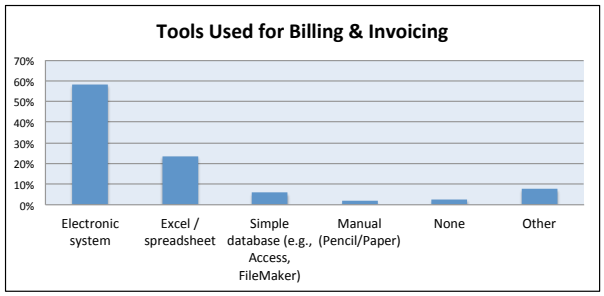




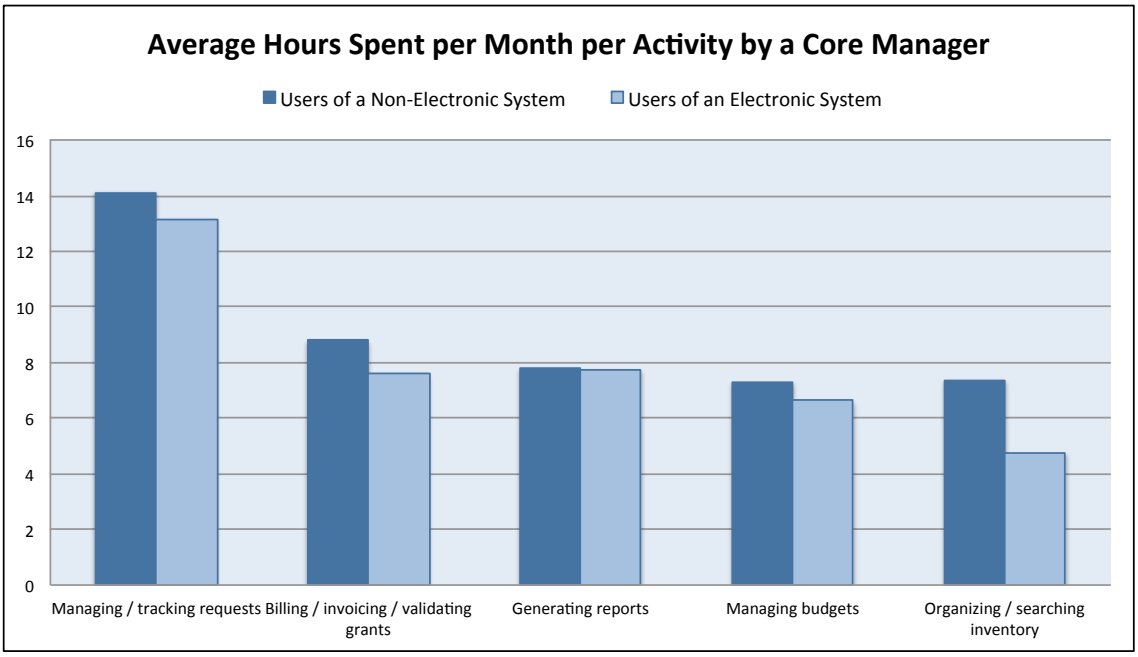




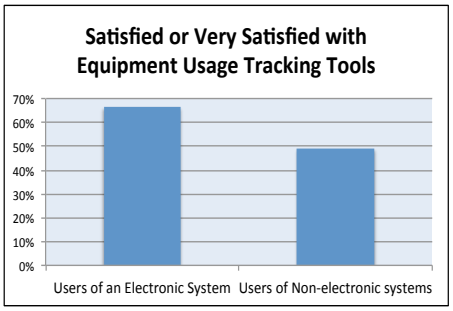


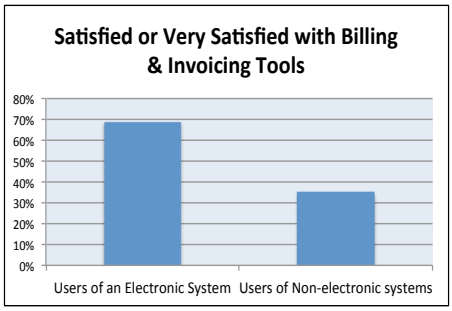


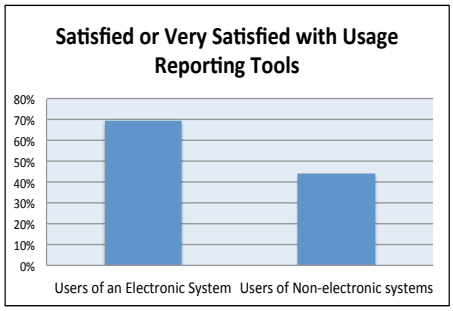
Time Spent Running the Core with Electronic Systems: The average time spent on just the administrative tasks of running a core was 44 hours per month for the full data set.

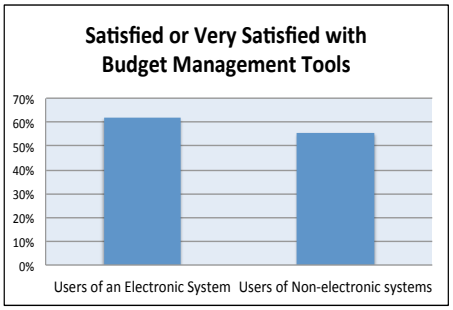


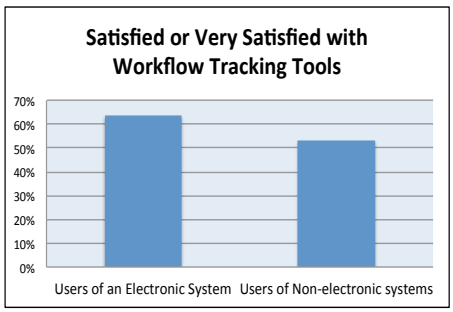
When Isolating responses of those who use an electronic system for tracking equipment usage, billing and invoicing, creating usage reports, managing budgets, and tracking workflow, the satisfaction rate was consistently higher than that of users of a non-electronic system.



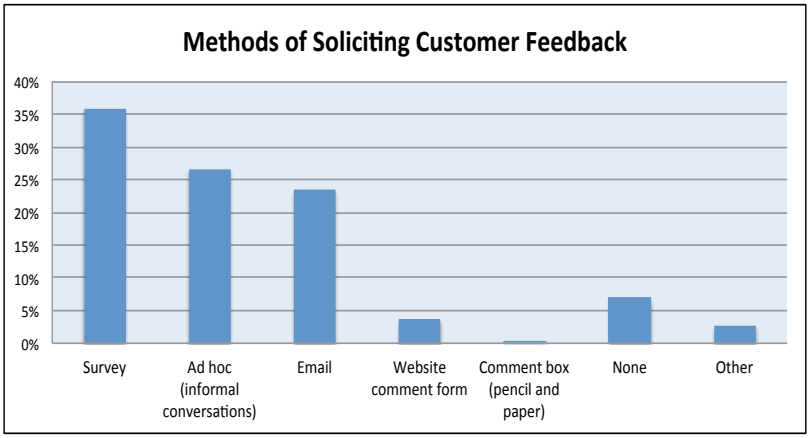




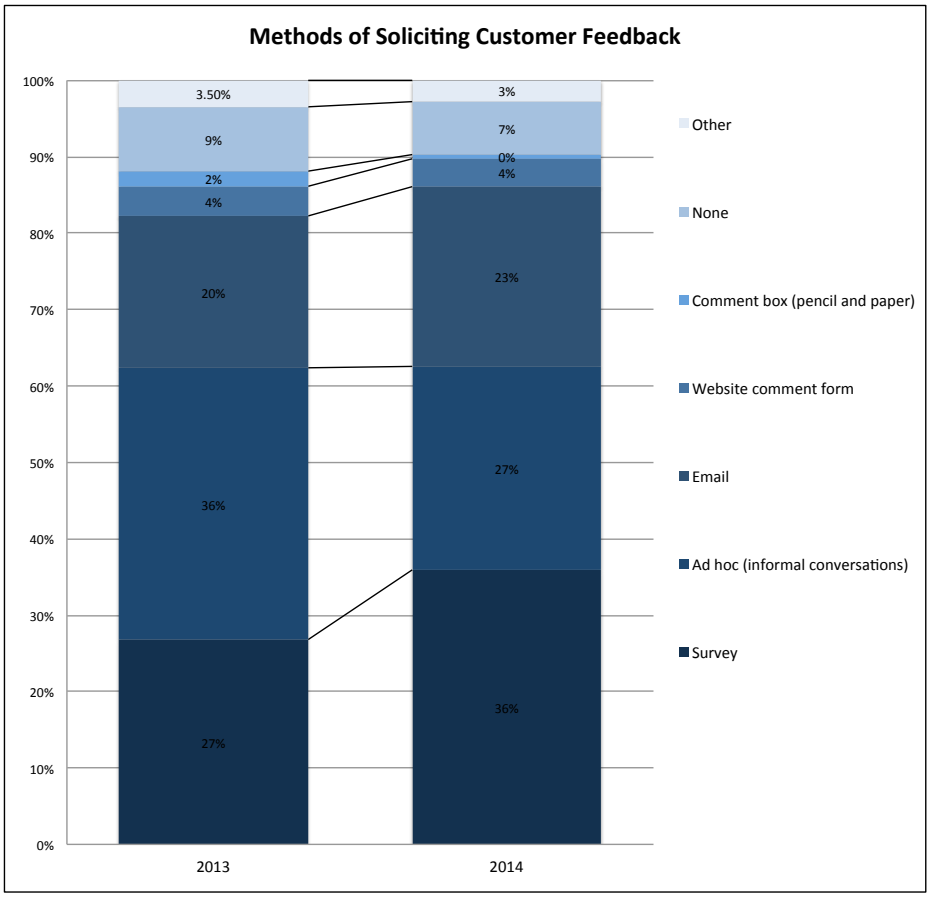




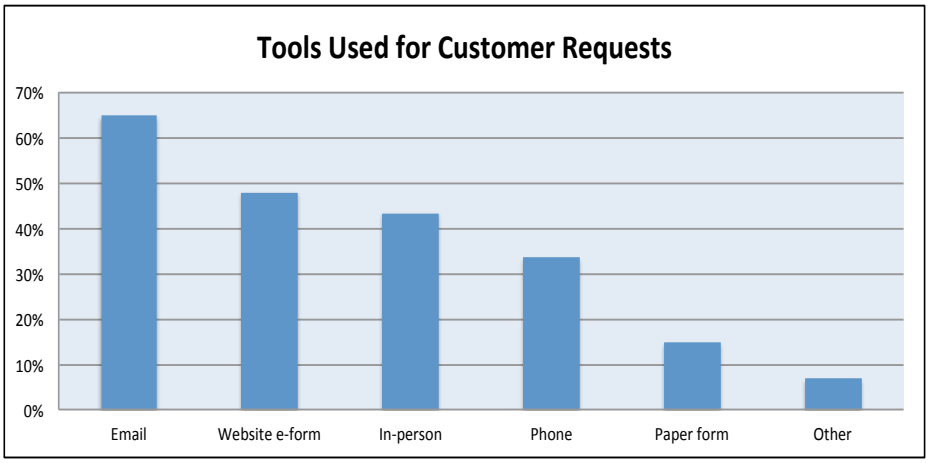
Satisfaction Rate and Time: For 2014, the pencil and paper method of soliciting feedback has nearly disappeared, as less than 1% reported using a comment box. Additionally, ad hoc fell from the most common method in 2013 at 36% to the second most common in 2014, at 26%.



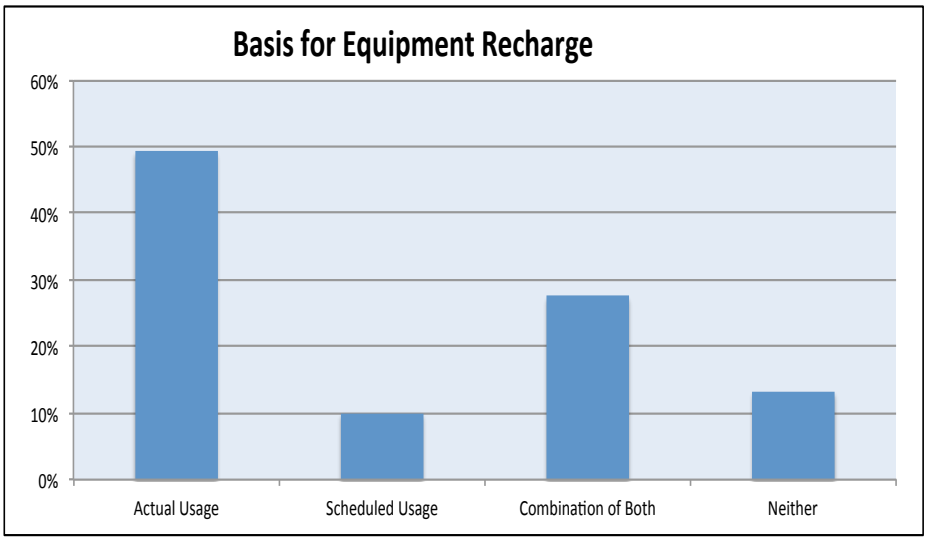
Customer Feedback: Survey has risen as the top method for soliciting customer feedback (36%), followed by ad hoc (27%) and over email (23%).



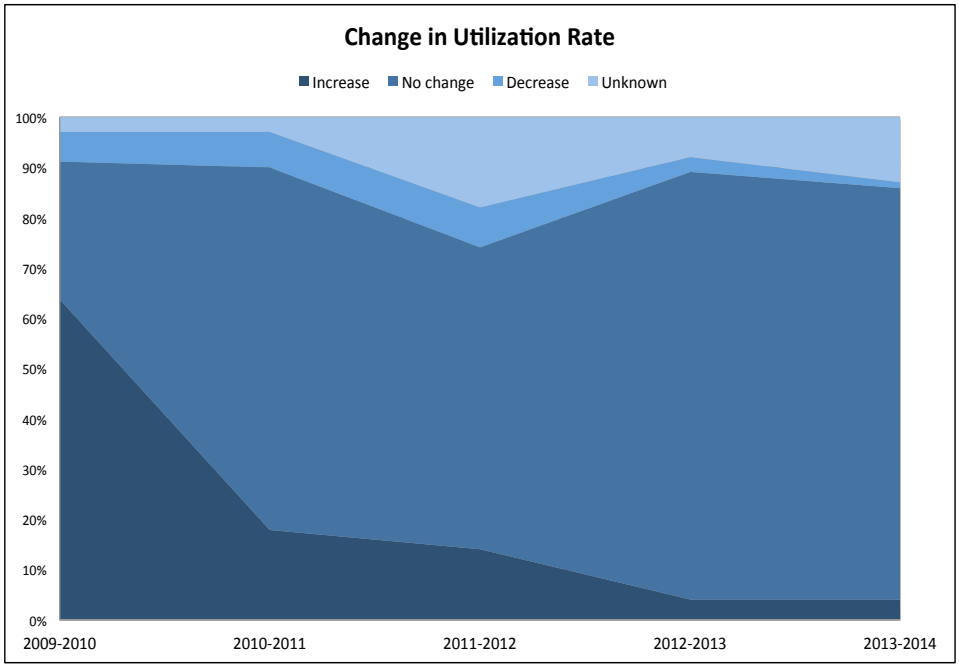
Marketing the Core: Cores tend to market their facility in numerous ways, the most common methods being word of mouth (78%) and the facility's website (77%). Other ways cores market their services include email distribution (42%), on-site posters (39%), conferences (34%), and other (8%), which includes seminars and workshops, facility tours, on-line databases, and referrals.



Receiving Customer Requests: On average, **cores received 65% of their service requests or reservations by email.** Other important methods include website e-form (48%), in-person conversations (43%), phone (33%), and in paper form (15%). These numbers have not changed significantly from 2013.

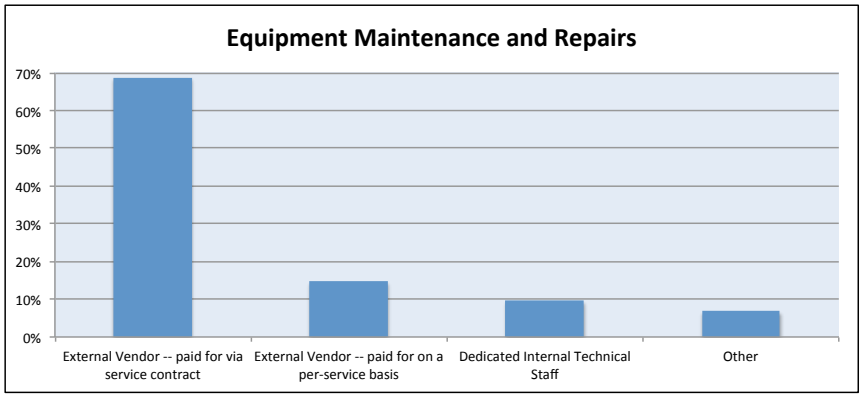


Equipment Recharge: For equipment-based cores, **49% said they base recharge on actual equipment usage.** 10% said they charge for only scheduled time, and 28% said recharge is based on a combination of actual and scheduled usage. 13% of cores surveyed said they did not charge for actual usage or reserved time. Some of the alternatives provided were: "It is calculated into all services using the equipment," and "Cost based."

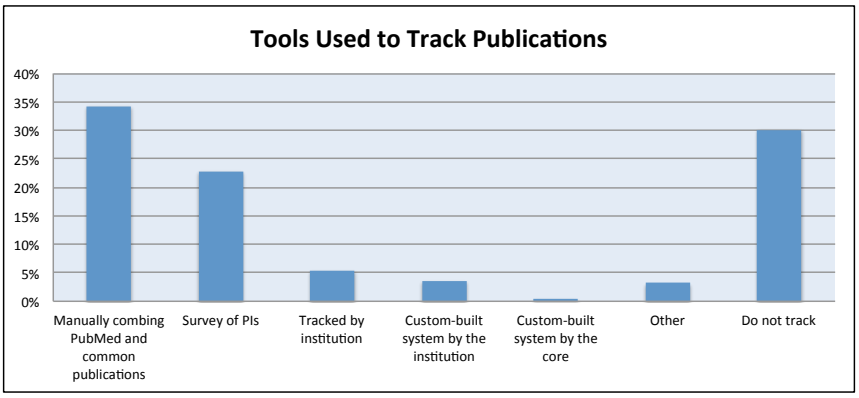


Utilization Rate: **The majority of respondents (82%) reported no change in utilization from 2013 to 2014** and a much lower percentage (4%) reported an increase of change in utilization rate. This is tied with the previous year for the lowest increase in utilization since iLab began its annual Benchmarking Study in 2011. Since the study's inception, the greatest increase of year-to-year utilization occurred from 2009 to 2010 with a rate of 64% growth.

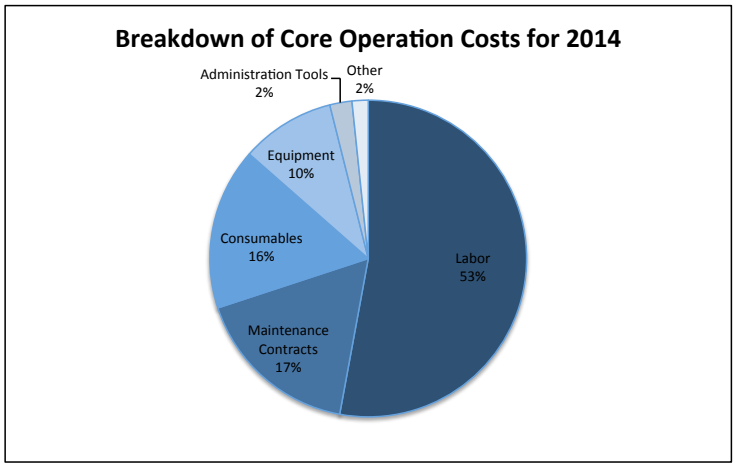
Equipment Repairs: 69% of cores surveyed use external vendors, paid via a service contract, for maintenance and repairs. 15% said they use an external vendor, paid on a per service basis. 10% said they have dedicated technical staff, and 7% said they use "other" means for maintenance, which mainly included a combination of both external vendors and internal technical staff, dependent upon the equipment type. These results are nearly identical to those of 2013.



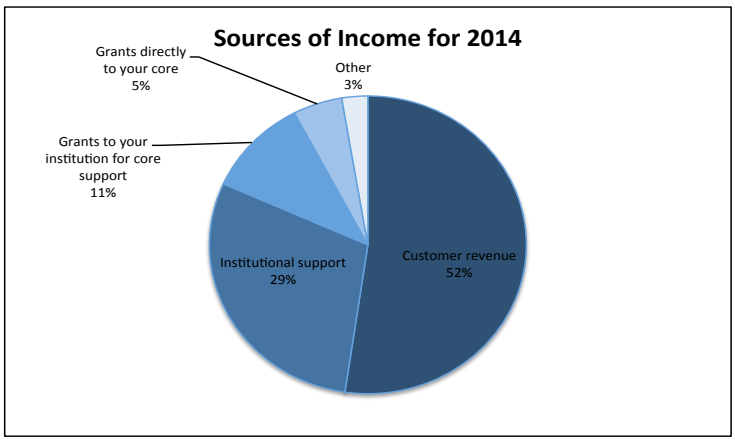
Tracking Published Research: The most commonly reported methods of tracking publications are manually combing PubMed and other common publications (34%, a 6% increase) and surveying PI's (23%). 5% said their institution tracks publications for them, and 4% said they use a custom-built system to track publications. These results are similar to those of 2013. **As in the previous year, 30% of respondents said they do not track research publications at this time**.



FUNDING & EXPENSES



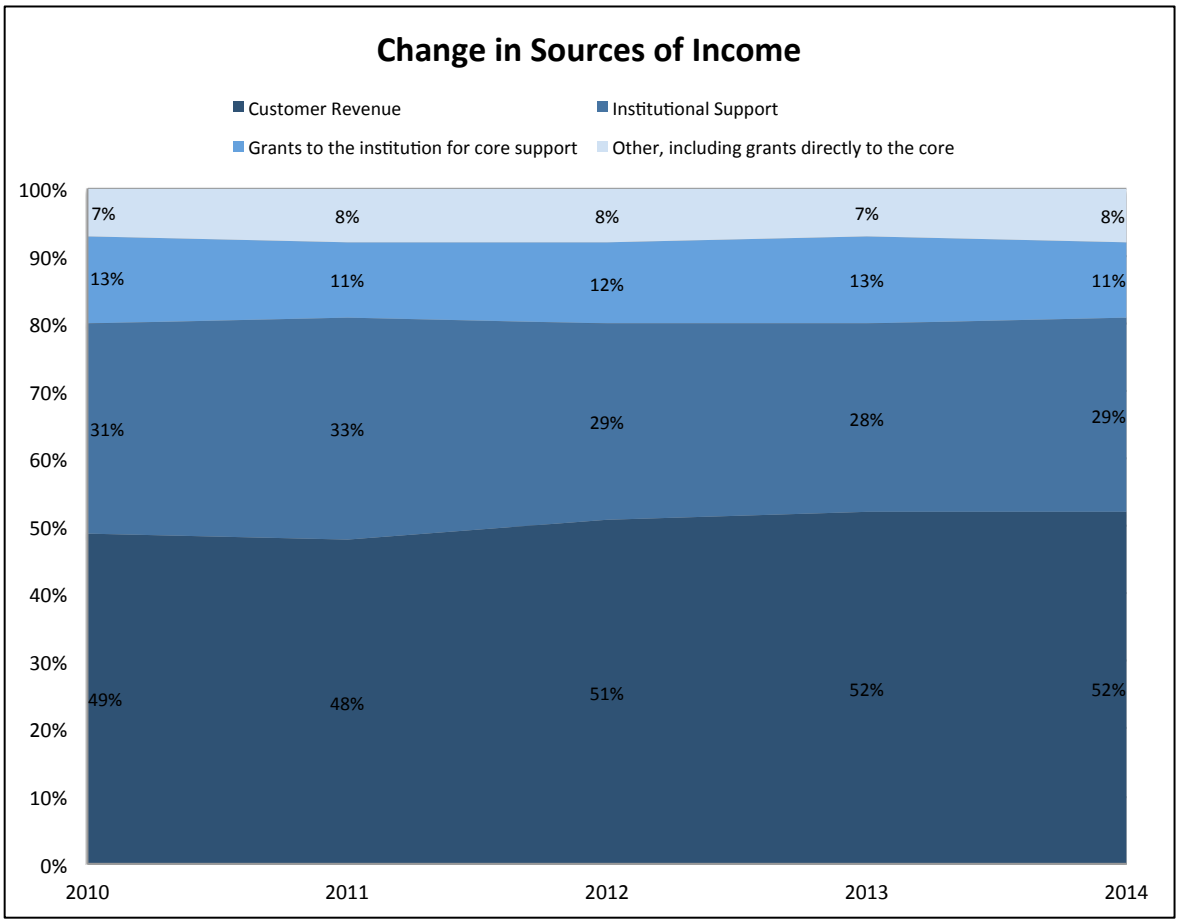
Costs: When considering total expenses[2] in 2014, labor was reported as the highest cost to cores, averaging 53%. This is up from 46% in 2013. In 2014 the average cost of maintenance contracts was 17%, consumables 16%, the cost of equipment was reported as 10%, and administration tools accounted for 2% of operational costs. This number is down from 4% in 2013.



Income: In 2014, the bulk of core income came from customer revenue averaging at 52%. The second most prominent revenue source was institutional support (such as subsidies) averaging at 29%. The remaining 19% of income came from grants and other funding sources.

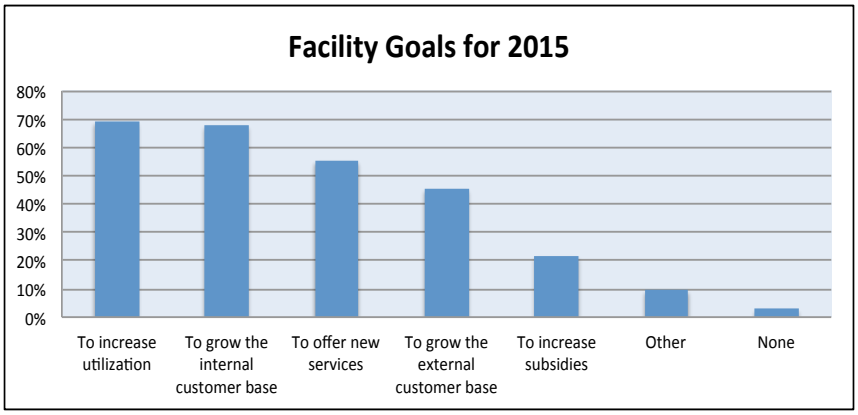
[2] Capital expenses are not included in this data.

From 2011 to 2013, the reported percentage of cores' annual income that comes from customer revenue increased, whereas the percentage of institutional support declined. However, 2014 saw customer revenue plateau, while institutional support slightly increased to 29%, the same as reported in 2012.



FACILITY GOALS

Goals: Cores' top goals for their facility in 2015 are to increase utilization (69%) and grow their internal customer base (68%). Other goals reported are offering new services (55%), growing external customer base (45%), and increasing center subsidies (22%). 10% of responses cited "other" goals, which included increasing grant funding, publishing more papers, adding new pieces of equipment, and enhancing educational offerings.



Summary of Results

When asked, "What are your biggest challenges as a core manager," the top challenge cited was generating revenue. Core facility directors and managers continue to face the difficult responsibility of maintaining a sustainable resource that can afford new technologies to keep it on the cutting-edge of scientific research. Not only does new technology help attract new customers to a core, but it's a necessity in the research environment. However, core managers are having an increasingly difficult time securing the necessary funds to keep their cores running smoothly. "Running it all on scarce resources," and "Securing adequate funding" were two quotes cited in this report, among many on this topic.

According to the study, customer revenue comprises an average of 52% of a core's income, while institutional support makes up 29%; grants and other sources of funding make up the rest. With decreased funding in research grants, cores are reliant on their two largest sources of income to make up the difference; however, 6% of core managers cited that getting support from institutional administration was an even greater challenge than generating revenue. As one core manager put it, "[My biggest challenge is] trying to convince the administration that we are worth keeping." The viability of a core facility is reliant upon support by the institution.

One way a core can show its value is through increased usage; not to mention, this is also the most prominent way for a core to remain sustainable. Customer revenue is the highest income generator for a core and is the most likely area for growth. Core managers support this analysis. According to the study, 69% of core managers said increasing utilization was a top goal. Ways in which they would like to increase usage include "increasing internal customer base" and "offering new services."

Each of these goals represent the need for growth among core facilities, and the recognition that funds for growth generally come from customer revenue. Core customers generally receive their funding from grants, which, as previously mentioned, are shrinking. However, in this case, it is to the core's benefit. The need to stretch available dollars has become increasingly apparent from the researcher's point of view. The study shows that only 10% of cores surveyed saw a decrease in their core's utilization, despite shrinking national funding; this proves that researchers are realizing the benefits of a shared resource facility, where renting a piece of equipment, for example, is more cost effective than purchasing it. In addition, a majority of respondents (36%) saw no change in their core's utilization in the last two years.

Although there was little change in core utilization, there was a dramatic decrease in labs served per FTE from 10 to only 7. This implies that fewer labs or researchers are vying for much needed shared services. To attract the finite grant dollars, core facilities must maintain a competitive edge by remaining abreast of the most current technological advances. However, as one manager put it, "Finding the capital to keep our facility at the cutting edge of available technology" prior to attracting the dollars to purchase the technology is something of a self-perpetuating problem.

Another such way to increase usage is simply through having more time. Time is needed to perform services, conduct trainings, and market the core's resources, among other tasks. It is a precious resource for core managers; in fact, not having enough time to run their facilities was the second most common challenge reported.

For this issue, however, there may be a reprieve. According to the study, the use of electronic systems saved core managers time when conducting tasks such as budgeting, funding, time management, administrative work, increasing utilization, and problems with billing. These problems totaled 65% of the

top challenges core managers face today. Those with electronic systems not only cited time savings; they also reported dramatically higher satisfaction rates with regard to tools they use to run their core.

About iLab

iLab Solutions is a leader in providing web-based management services to academic research institutions, with customers that include leading NIH-funded universities, research hospitals, and independent institutes. iLab leverages a scientific advisory team comprised of active PIs with research backgrounds from Brigham & Women's Hospital, Dana-Farber Cancer Institute, EMBL, Harvard University, Huntsman Cancer Institute, Mt. Sinai School of Medicine, Stanford University, University of Melbourne, Vanderbilt University, and Yale University. The iLab leadership team includes executives with experience from ABRF, Dana-Farber Cancer Institute, Deloitte, Facebook, Genentech, Intel, IRB Barcelona, McKinsey, Microsoft, Nationwide Children's Hospital, The Ohio State University, Research Institute of Molecular Pathology, Roswell Park Cancer Institute, SAIC, and Vanderbilt University.

In March 2013 iLab signed a partnership with Vanderbilt University where the CORES software platform was developed in 2001 and updated and maintained on an ongoing basis. This partnership brings together the two most sophisticated and broadly used solutions for core facility management. Over the course of the past few years, the joint team has been incorporating the best features of the CORES software into the iLab platform, and will continue to leverage Vanderbilt's academic perspective to help guide future development.

The combined iLab/CORES solution serves 125 research institutions in twelve countries, including 32 of the top 50 recipients of NIH funding. iLab has extensive experience providing enterprise-level solutions at major research institutions. These solutions include integrations with institutional financial systems (e.g., SAP, Oracle, PeopleSoft, Lawson, Banner, IFAS, etc.) and identity management systems (e.g., Active Directory, Shibboleth, etc.). iLab's dedicated implementation team and established implementation processes supports a high adoption rate and fully trained personnel resulting in effective use of the system.

iLab offers a suite of web-based tools for academic research management. The modules available include core facility service request management, enhanced sample management functionality (including a sample processing management tool), equipment reservation and usage tracking, billing and invoicing, reporting, and lab requisitioning and spend tracking tools. In addition, iLab offers modules to support Product Cores (storeroom management), study management, and equipment lockout capabilities. Its animal management software is currently under development and will be available for wide deployment in late 2015. iLab's software interface allows each user a consolidated view of their recent activity across all modules as well as the ability to search across all equipment, services, and cores in the system.

In order to ensure stability, security, scalability, and responsiveness, iLab conducts all software development, application maintenance, deployment, and user support internally. This internally resourced approach results in a close relationship between iLab and our customers and ensures iLab can rapidly address customer needs.

Appendix A *(Details of Open-Ended Survey Responses)*

Q1. What are your biggest challenges?

1. Funding & Budget: (35% of responses)

Anticipating needs and budgeting accordingly
Balance rates that users will pay with generating sufficient revenue
Balancing budget
Breaking even financially
Budget and equipment needs
Budgeting for costs that are not covered by subsidies, like service contacts and finding ways to increase usage
Budgets and managing a lot on very little
Buying new equipment to keep up with advances in technology
Continued equipment costs
Due to budget constraints, we are only 2.5 FTE to operate this facility where 3.5 FTE at least would be needed
Equipment repair costs – we cannot afford to purchase contracts on equipment so the department is required to pay and we try to get the med school to help, but basically, we are an orphan
Finances/budget
Finding capital funding to keep our facility on the cutting edge of available technology, increasing utilization of new equipment once we are able to purchase
Finding institutional support
Finding money to update/upgrade equipment
Funding
Funding new instruments; institutional support of infrastructure and staff salaries
Generating sufficient revenue to support staff and reagents/supplies/maintenance
Getting consistent funding for equipment, personnel, and repairs. Our budget is from specific departmental/grant sources and not from the institution itself
Having enough staff to handle new requests while maintain budget expectations
Income & new staff training
Increased cost of running facility, service contracts, salaries
Increasing recovery costs
Increasing revenue with only a single employee
Lack of institutional support
Launching and funding new services requested by researchers
Managing the budget
Meeting the budget
Predicting future usage and costs
Price
Raising funds for new equipment
Rate calculation based on cost to operate
Reducing costs in 2015

Revenue
Running it all on scarce resources
Salary of the core facility technical staff who run the core on the daily basis is not from a constant source and is mostly grant funded under research
Secure adequate funding
Subsidies to keep cost down
To find money for the service contracts and to replace instruments
Upgrading instrumentation and technologies on a budget

Time Management/Administrative Tasks: (18% of responses)
Coordinating work flow
Finding time to do everything
Finding time to work on documentation materials, as well as R&D
Handling so many projects at the same time and making sure the recovery rate stays at 95% or above
Keeping up with day to day functioning of the core and trying to constantly bring new technology
Keeping up with literature and advising clients in a wide variety of fields
Keeping up with state of the art methods of cost rate analysis
Keeping workload at an even level; managing competing priorities; not knowing how to predict workload expectations
Lack of time
Maintaining stability of cost recovery
Maintaining the turnover rate for data generation
Managing expectations and enabling effective decision-making by directorate committees
Metrics reporting
Offer good services and training. Feel that sometime cannot help user because have something else to do
One of my biggest challenges is reporting utilization effectively
Project and sample tracking
Project management
Project tracking, data analysis
Time management of sample load
Time management. Customer expectation management
Time. Tons of emails and database entries. This would be enough if there also wasn't time in the labs besides all this
Tracking and managing requests
Tracking publications, educating users
Training and marketing
Workload management and keeping up to date with best practices

Increasing Utilization/Customer Base: (9% of responses)
Bringing in enough business
Finding clients
Gaining customer base

Getting customers to use equipment once the free/trial period is over, no matter how much they said they would use the equipment before purchase
Getting new customers
Getting new internal facility users
Increasing usage
Increasing usage of instruments
Increasing utilization
Low usage of some technologies
Obtaining new customers
Reaching an audience beyond our built in users at our institution
To improve usage from intra and extra-mural researchers
Utilization of core

Customers/Users: (7% of responses)
Communication with researchers
Convincing users that using controls is imperative and black magic is a no no
Customer compliance supplying needed documentation
Dealing with complaints/grant deadlines
Dealing with irrational people and customers
Education to users
Keeping customers happy
Managing customer needs
Setting expectations with customers
User education – we offer but they don't always come

Administration: (6% of responses)
Balancing multiple bosses when their priorities do not align. Academic boss vs. facility boss
Educating the senior administrators
Getting administration to understand the needs of the users
High-level administrators do not really appreciate staff's work and opinion/suggestions
Lack of information from higher ups
The director
Trying to convince the administration that we are worth keeping
Upper management

Support/Instrumentation/Maintenance: (6% of responses)
Instrument upgrades
Instrumentation
Instrumentation located outside of the core where they don't charge investigators for use
Keeping instruments functioning and up to date
Keeping the equipment running and available for the researchers
Replacing and updating instrumentation
Self-servicing maintenance

Support
Support of old equipment. Training users on old equipment.

Staffing: (6% of responses)
Justifying personnel, maintaining personnel
Keeping employees happy
Making sure the staff and users keep up with the procedures
Managing staff, hiring staff who are a good fit with the core, particularly hire end staff
Need more personnel with computer skills
Not having any help unless there is a student I can hire to help with the instrument maintenance
Personnel, morale, funding, fitting in with the organization, respect
Recruiting and retaining good staff
Retaining talented staff and low staff salaries

Billing/Other/Unique (13% of responses
Billing
Co-workers
Cost of equipment service contracts in Canada vs. US. They are about double the cost and I can't get a straight answer from the vendors
Dealing with the institutional accountants
Doing two billing processes; one on iLab and another on ifas
Getting users to come to discuss their projects before buying all the reagents and starting the experiments
Integrating lab with analysis
Knowing who to contact when issues arise
My lab technician is not enforcing iLab with clients. He does all his work on the basis of "gentleman's agreement." I am forced to bill based on his handwritten records
Reporting from the system
Staying busy with decreasing work volumes