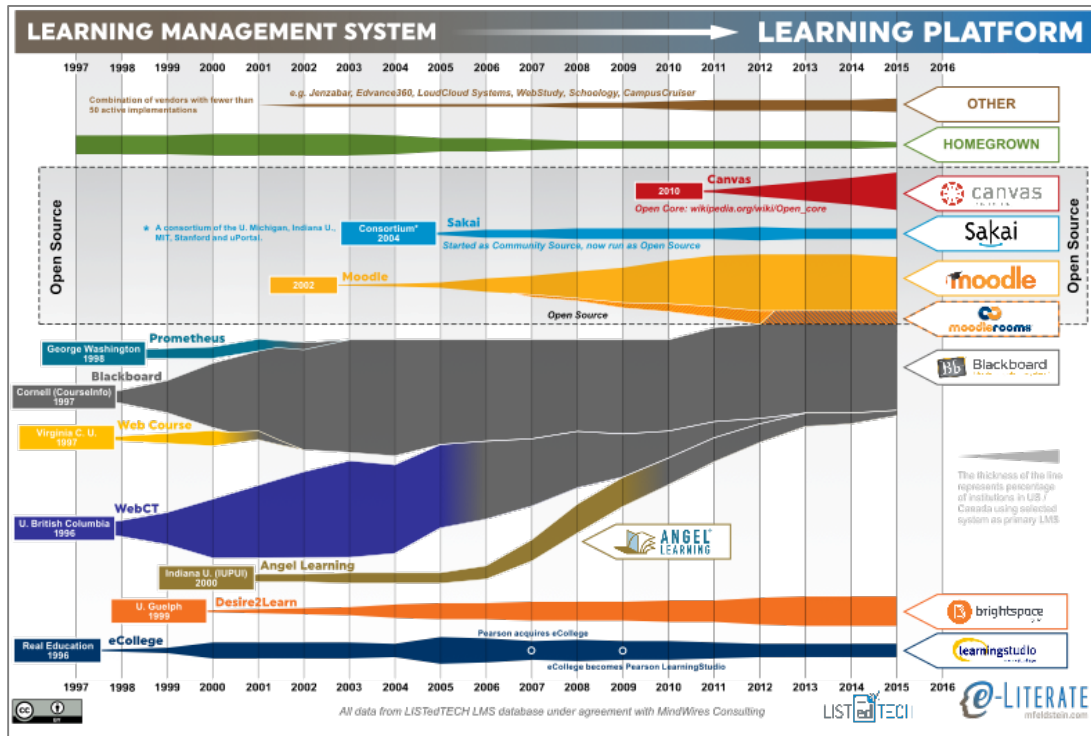




BIG PICTURE



LMS MARKET DYNAMICS

Fall 2016 Edition

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PREFACE: PURPOSE AND ORGANIZATION OF REPORT

This report is designed to track changes in the LMS market in the United States and Canada since the publication of our Spring 2016 report. We'll look to see which trends are continuing and identify any surprises. There are also general updates on overall shifts in market share.

In addition to the update, we share some findings from our recently published European LMS Market Dynamics, Fall 2016 Edition. This report takes a close look at the recent past, current state and emerging trends in the region. Our conclusion is that big changes are coming as new entrants and shifts in hosting strategies threaten to disrupt a market long dominated by Moodle and a host of regional and national open source solutions.

Finally, in the last section, we describe our data source and detail some important additions for this Fall Update.

FALL 2016 MARKET UPDATE

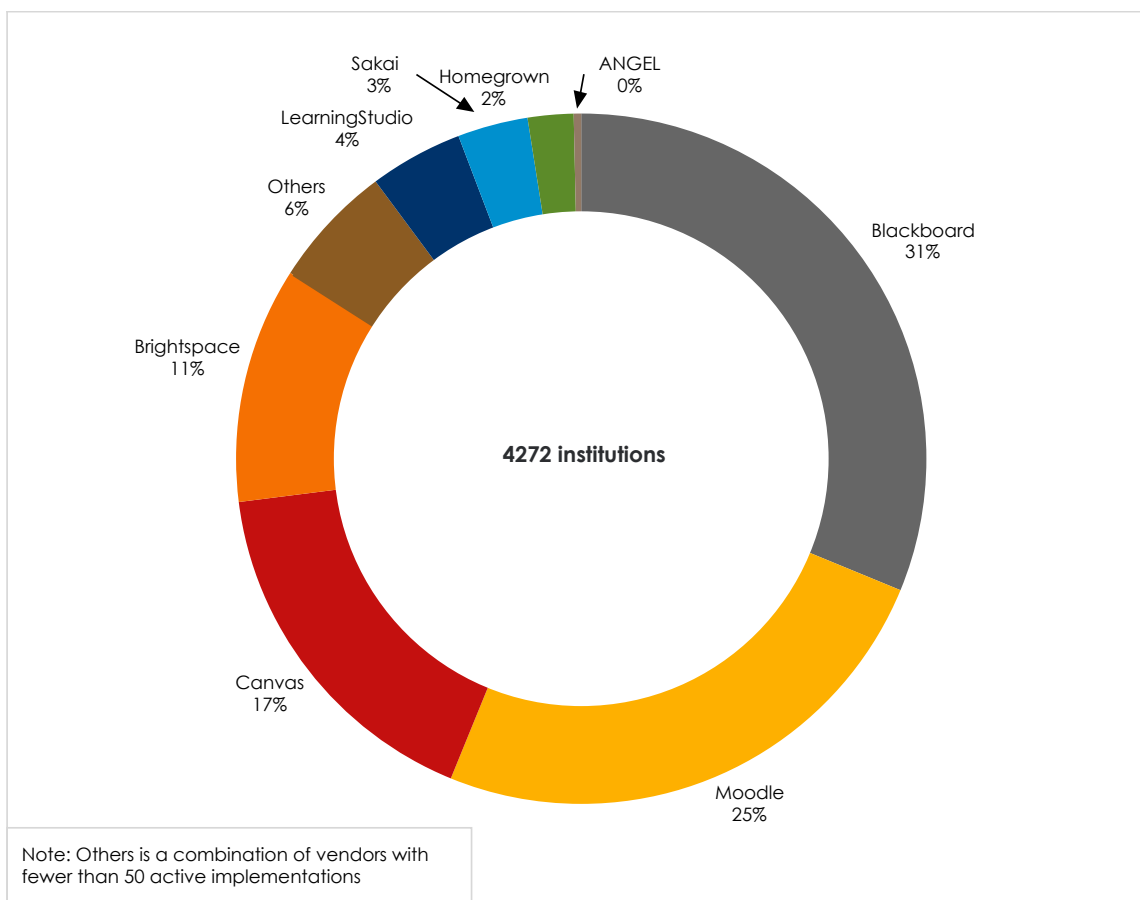
EXECUTIVE SUMMARY

- Blackboard's market share continues to decline while Canvas keeps gaining new business; Brightspace holds steady.
- The average age of LMS adoptions dropped from 8.7 to 8 years supporting our thesis that switching costs are going down and more institutions are making changes
- After plateauing, open source platforms continue to lose market share, albeit slowly
- Not only is Canvas winning 69% of LMS selection decisions, they have yet to begin shedding customers that were early adopters.
- Brightspace finished the year strong, earning 14% of new implementations after a slow start. Some of the market gains came from clients leaving Pearson LearningStudio. The gain of new customers, however, was offset by attrition of existing customers.

MARKET OVERVIEW

MARKET SHARE

Since the publication of our Spring report, Blackboard's market share has continued to deteriorate, dropping from 34% to 31%. Canvas maintained its growth trajectory and picked up three percentage points, moving from 14% to 17% of the higher education market in the United States and Canada. Moodle stayed steady at 25%, Sakai dropped from 4% to 3% and Angel implementations have almost completely disappeared seven years after their acquisition by Blackboard, when they had 11% market share. Brightspace from D2L remained consistent at 11% as did Learning Studio at 4%. We expect to see the Learning Studio number drop precipitously next year because of Pearson's decision to retire the platform. We'll be watching to see who picks up new business as a result. While D2L reached an agreement with Pearson to be the "preferred" platform for current Learning Studio customers, it's not yet clear which, if any, platform will be the main beneficiary.

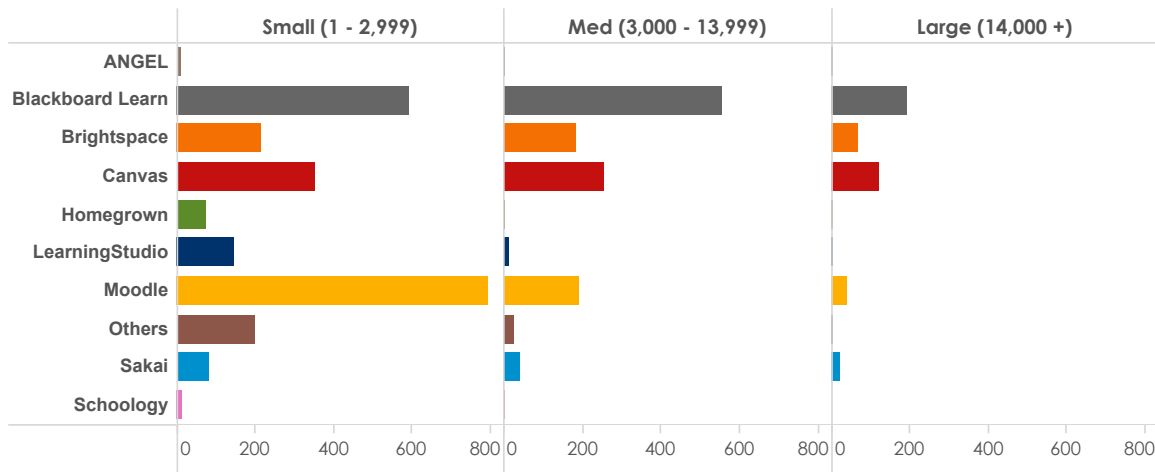
Figure 1: Fall 2016 LMS Market Share**Percentage of US and Canadian Higher Ed institutions using each LMS as primary system**

In our previous report, based on data linking institution size to LMS usage, we highlighted the fact that smaller institutions are more likely to use Moodle and Learning Studio than their medium and large counterparts. We also pointed out that smaller institutions are the main customers for smaller market share companies like Jenzabar and Schoology. We see these trends as likely to continue, though in the case of Schoology, we wouldn't be surprised to see them gain traction with some medium and large schools in the next 6-12 months.

Another data point worth noting, when we compare Spring to Fall, is that Brightspace and Canvas used to be neck and neck in the market segment of larger-enrollment institutions. As we can see below, however, Canvas now outpaces Brightspace in that category as well, with almost double the number of implementations.

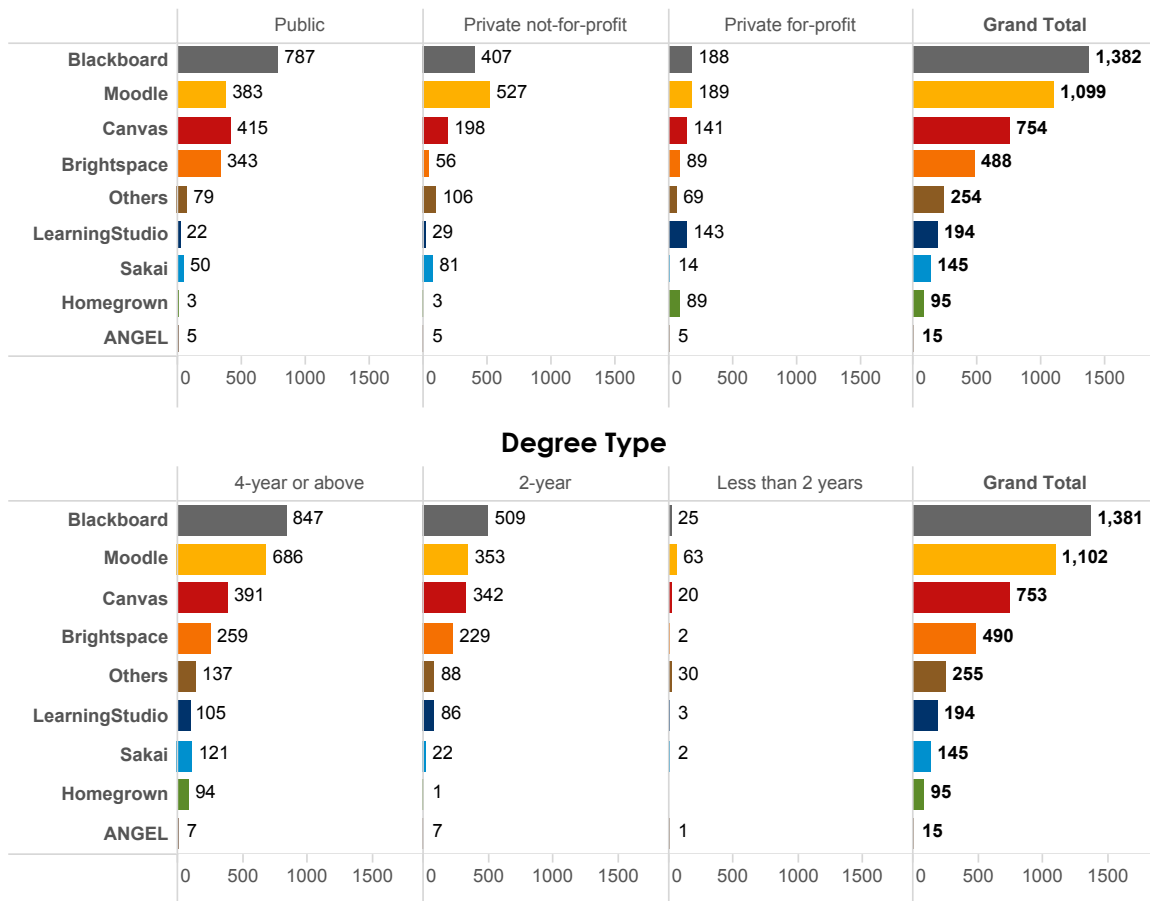
Figure 1: LMS Distribution by Institution Size

Number of US colleges and universities using each LMS as their primary system



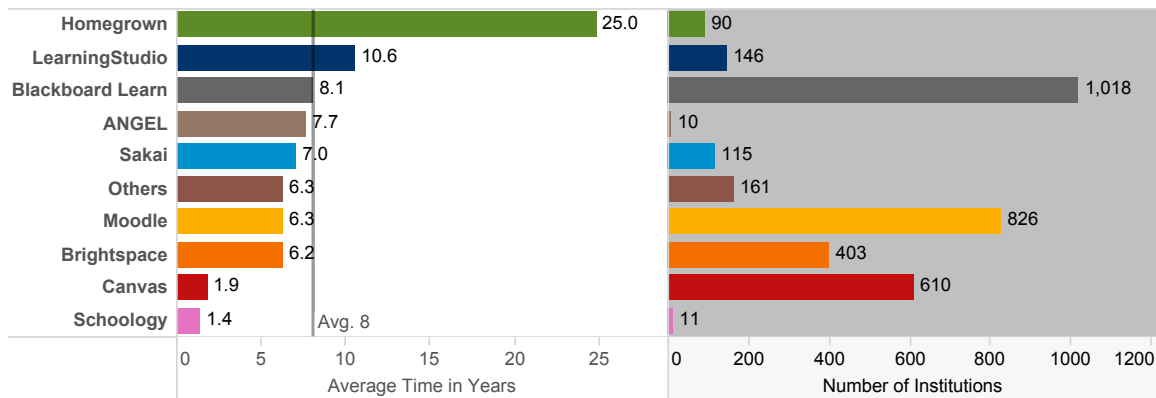
When we look at changes in LMS usage by institution type, particularly in the private for-profit sector, we see some notable changes from Spring to Fall. Blackboard dropped from holding a market share of 23.4% in this segment down to 20.3%, a drop of three percentage points. Canvas rose by 1.5% to 15.21% and Brightspace showed the most growth, moving from 7.6% to 9.6% of the segment. Some of the change can be attributed to the addition of 166 for-profit campuses to the database and their relative distribution across the different LMS platforms. Another part of the change is captured by new business, including an important win at Kaplan which brought a number of new campuses into Brightspace's total count.

The trends previously identified remain consistent in the fall, namely that Moodle has most of its implementations at private not for profits, Brightspace has most of its adoptions in the public not-for-profit space and Learning Studio does most of its business in the private for-profit space. Likewise, LMS buying patterns across degree types (the second graph below) have remained remarkably consistent with overall market share patterns.

Figure 2: LMS Distribution by Institution Type and Degree Offered**Number of US colleges and universities using each LMS as their primary system**

PRODUCT LOCK-IN

The average age of the primary active LMS dropped from 8.7 years to 8.0 years. This is a number we expected to go down as switching costs decrease and more institutions reevaluate LMS options. Brightspace and Canvas showed the biggest drops in age among individual platforms with Brightspace dropping from 6.9 to 6.2 years and Canvas going from 2.4 to 1.9 years, both driven primarily by new adoptions. LearningStudio saw a jump from 9.5 to 10.6 years as the overall number of implementations dropped from 199 to 146, suggesting that those who have been on the platform the longest are hanging on until the end. Finally, Schoology, with 11 implementations, was added to the chart and not surprisingly clocks in at a very young 1.4 years.

Figure 4: Average Age of Primary Active LMS in Higher Ed in US and Canada

Includes primary institutional LMSs for US and Canadian colleges and universities, both for-profit and not-for-profit, for all enrollments.

BLACKBOARD'S EARLY MARKET DOMINANCE CONTINUES TO ERODE

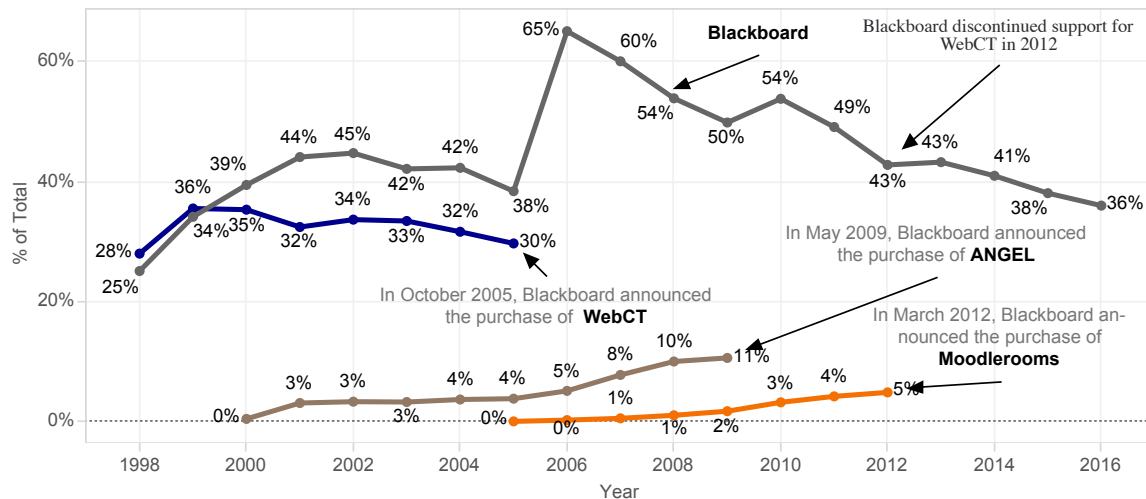
The graphs below tell the familiar and continuing tale of Blackboard's gradual decline in the LMS market. Blackboard's overall share dropped from 38% to 36% driven by decreases in both the Bb Learn and ANGEL product lines. Moodlerooms has remained steady at around 5% for the last four years since it was acquired.

It is worth noting that the data in Figure 5 and Figure 6 below is a subset of the total LMS records that include implementation dates. This might be reflected in slight market share discrepancies with Figure 1 at the beginning of this report which include all records, i.e. Blackboard Learn in Figure 5 has 30% market share, whereas in Figure 1 it has 31%.

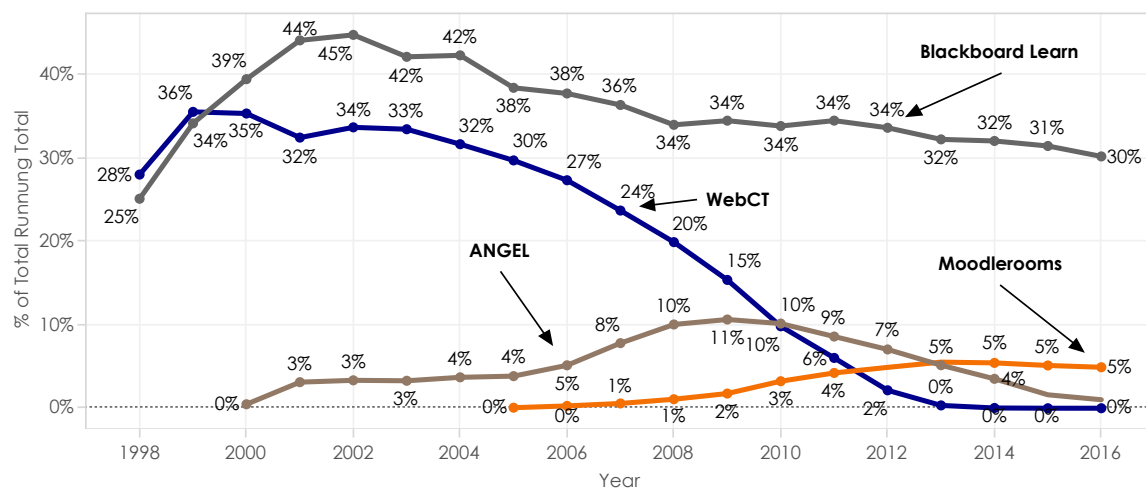
Figure 5: Blackboard's Acquired Versus Organic Market Share

Some LMS market share reports have failed to distinguish between Blackboard's total market share as a company and the market share of each platform owned or supported by the company. This practice masked a slow but consistent decline in Blackboard Learn's organic market share. We have provided two separate graphs to make the difference clear.

Total Company Market Share

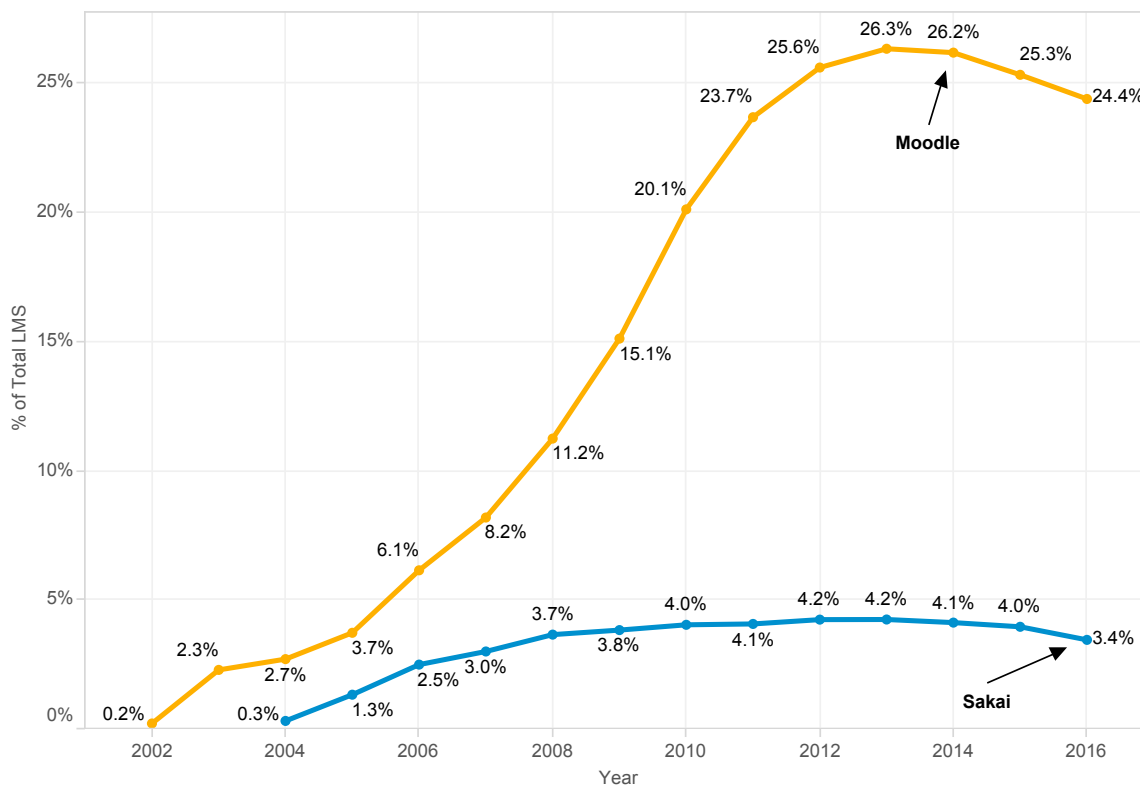


Market Share by Product



THE RISE, PLATEAU AND DECLINE OF OPEN SOURCE

Following years of steady growth and a recent plateau, open source platforms as a share of the market are now in decline. Since our Spring report, Moodle has moved further downward by almost a percentage point from 25.3% to 24.4% of the market. Sakai has dropped as well from 4.0% to 3.4%. Barring a remarkable turnaround or longshot entry from one of the numerous Europe-based open source LMS's, it's hard to see this trend reversing.

Figure 6: Open Source Plateau, Higher Ed Market Share in US and Canada

VENDOR-SPECIFIC TRENDS

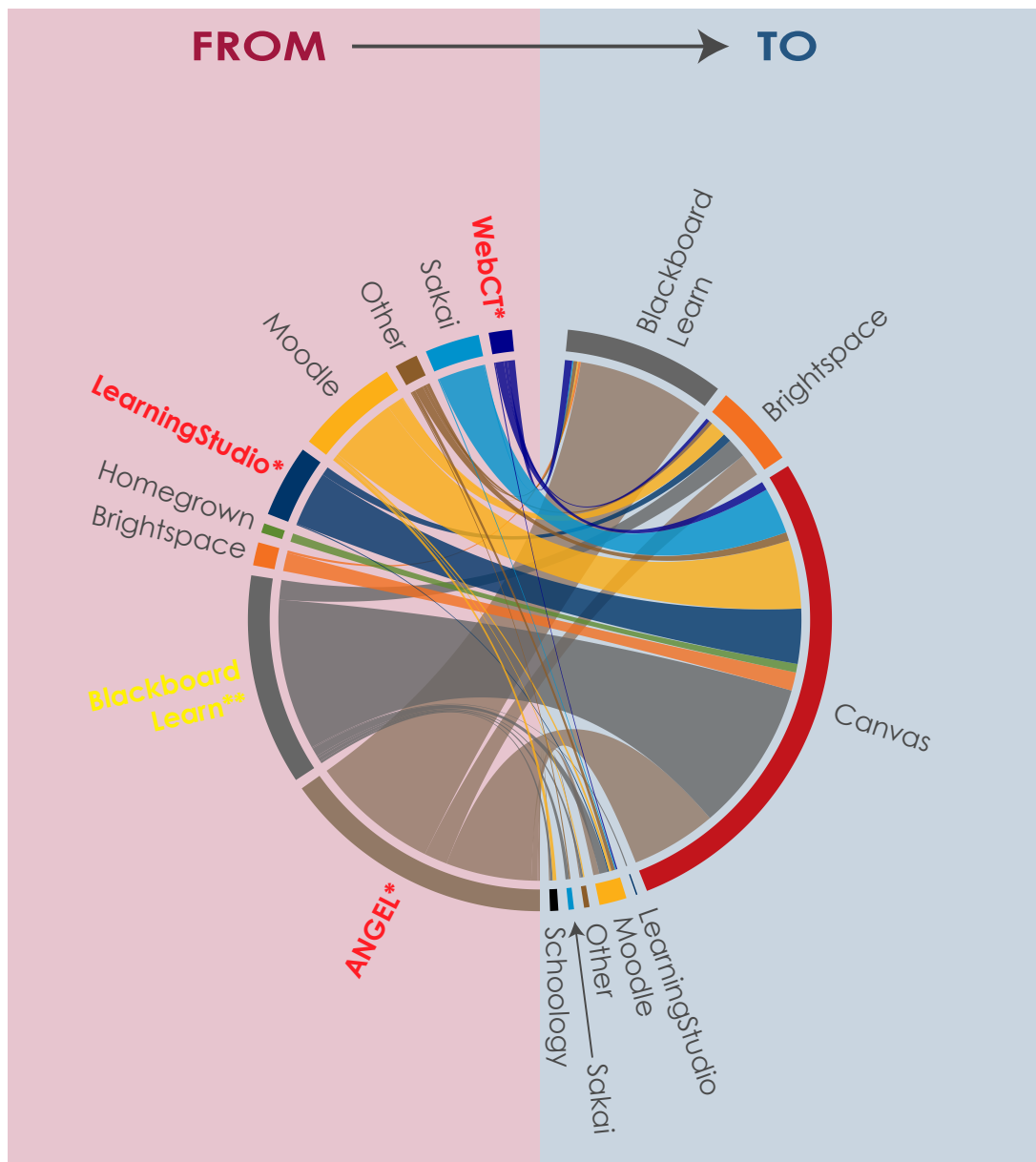
In the Spring report, we showed movement of customers from one LMS to another over a five-year period. Since the publication of the Spring report, we've had several requests to see what migrations look like in the last two years and what patterns are emerging.

As we can see in the chart below, Canvas is getting the lion's share of new business, followed by Blackboard Learn, Brightspace and Moodle a distant fourth. Canvas and Brightspace are pulling most of their new business from a evenly distributed cross-section of the competition. Blackboard Learn, on the other hand, is getting almost all of its new customers from ANGEL with a small slice from WebCT (both of which are owned, operated and discontinued by the larger Blackboard already so it's a bit like robbing Paul to pay Peter, i.e. no net gain in customers). It's also worth noting that many former Angel and WebCT customers are choosing to leave the Blackboard family entirely.

Taking a closer look at who's losing customers (excluding decommissioned platforms), we can see that Blackboard Learn is hemorrhaging the most, followed by Moodle and Sakai. Brightspace too, is losing customers but on a smaller scale. Canvas has yet to record any measurable defections.

Figure 7: LMS Customer Migrations, 2014-2016

This chart illustrates the movement of customers from one LMS to another in a saturated market.

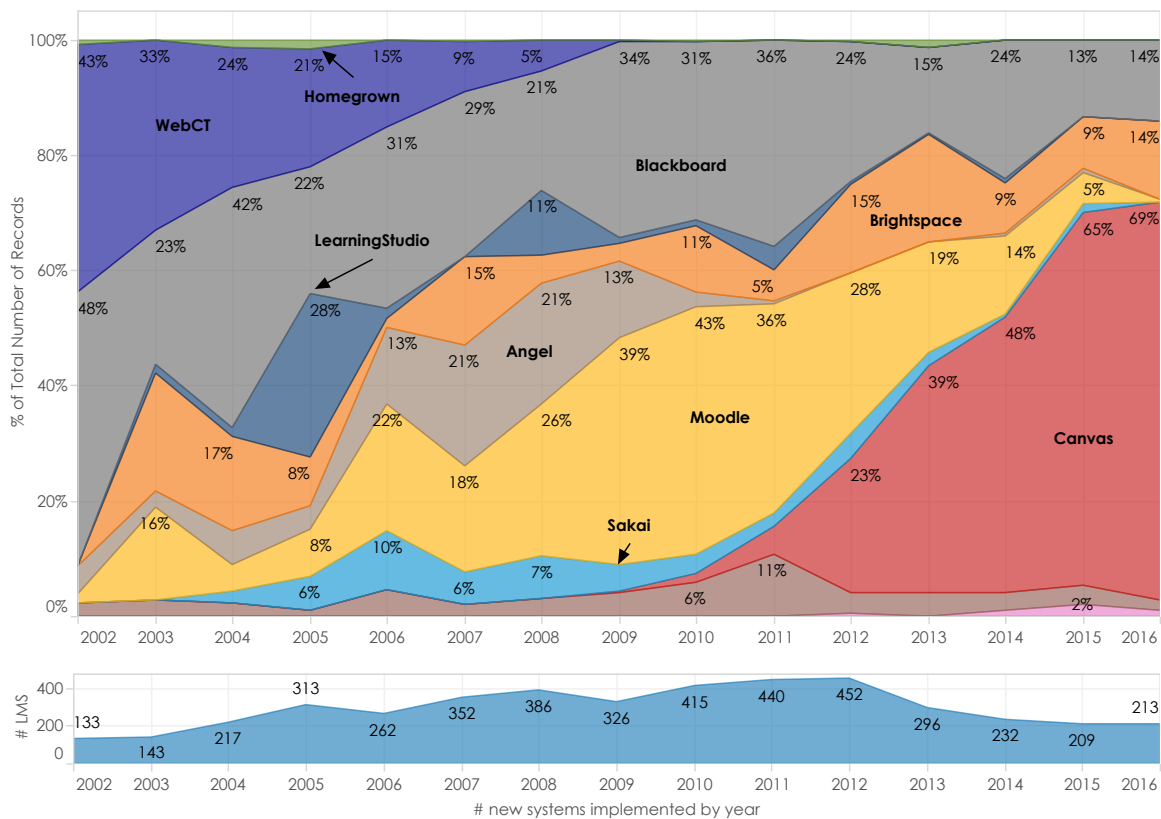


When additional data from the Fall is added in to the Percentage of New Implementation by Product chart, we see some remarkable changes. Much of the change can be attributed to seasonality, i.e. Fall tends to have three times the number of implementations that Spring does, giving us a much larger data set to work with while opening the possibility of large shifts. Amplifying the seasonal effect is the fact that our Spring data only included January and February. We're happy to have a more accurate picture that a full year's worth of data provides.

The most notable change from Spring is that Brightspace finished the year very strong, growing from a negligible percentage of new implementations in the Spring to 14% of new implementations for the year. Almost all those implementations came at the expense of Blackboard which dropped from 33% to 14%. Canvas continued its upward trajectory, moving from 64% to 69% of all new implementations for the year. Moodle and Sakai are not gaining new customers in any significant numbers. Finally, Schoology gets pulled out of the 'Other' category, winning a notable 2% of new implementations.

The addition of the Fall data also gives us a better picture of total new implementations for the year. Full year totals jump from 62 to 213, largely consistent with new implementation numbers from 2013, 2014 and 2015. While these numbers are smaller than those in previous year, largely driven by platform decommissions, they do reflect a healthy market for elective migrations. We'll be following these new implementation numbers in the coming months as we monitor growth trends.

Figure 8: Percentage of New LMS Implementations by Year

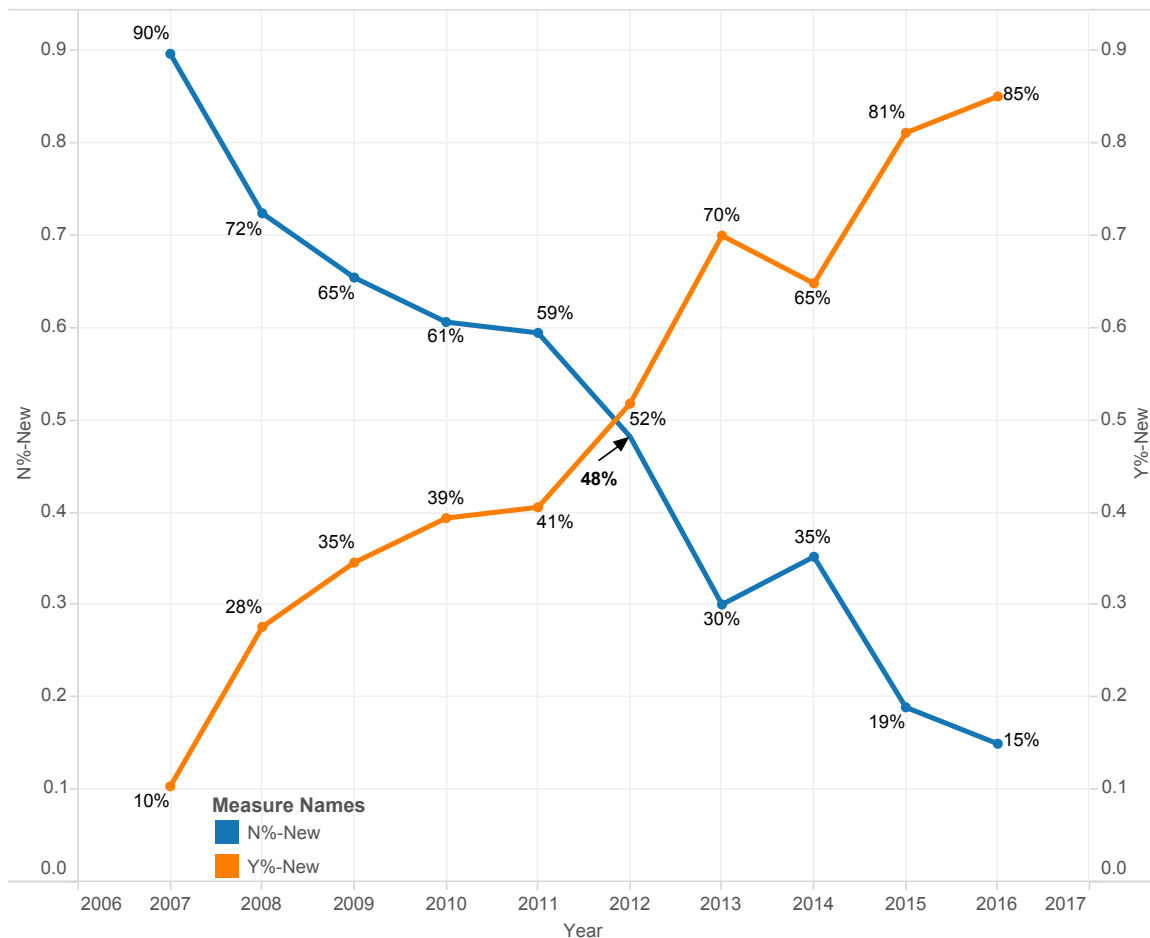


NEW GRAPHS FOR THE FALL UPDATE

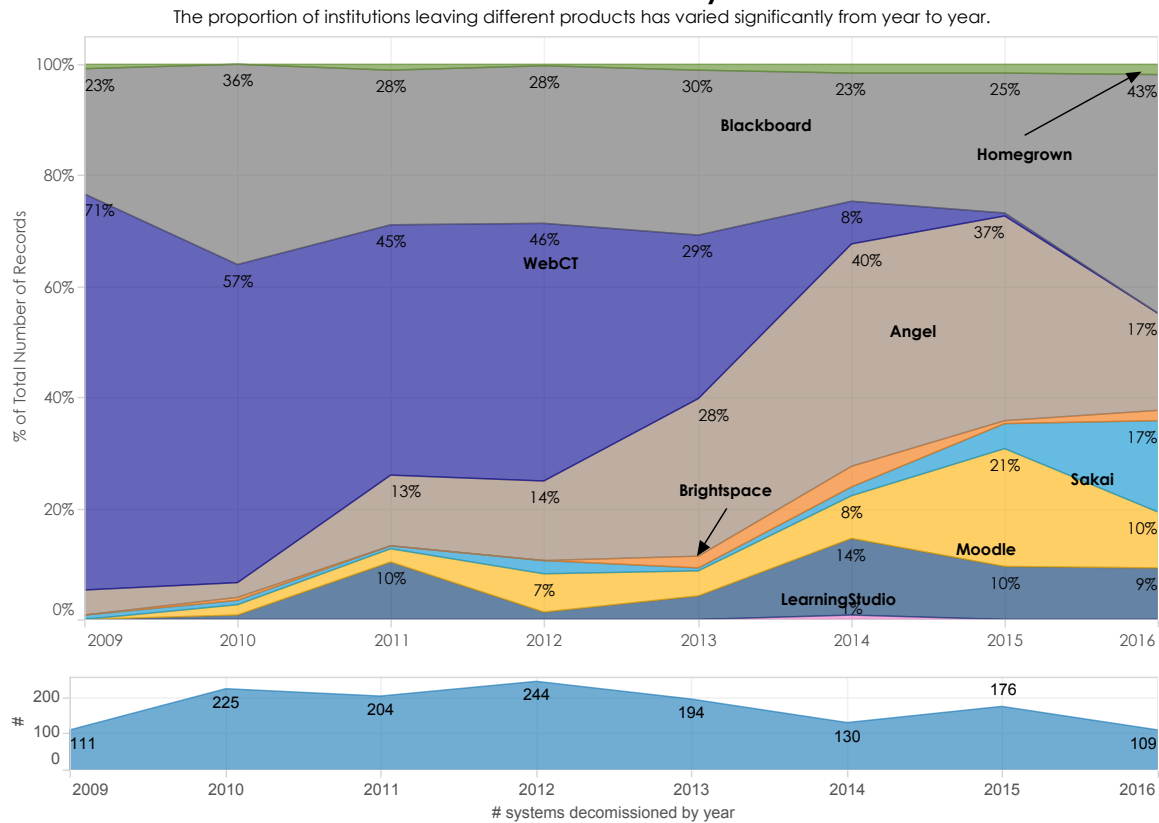
One of the clearest trends of the last several years has been a move away from self-hosting by institutions toward either vendor-hosting or a cloud-based solution. Figure 9 below presents the clearest evidence we've seen for this trend. The inflection point came in 2012 when vendor hosted and cloud based platforms first represented more than 50% of new implementations. Just five years earlier, in 2007,

90% of LMS platforms were self-hosted by institutions. Now 85% are vendor-hosted or cloud based and only 15% are self-hosted by institutions. The introduction and growth of Amazon Web Services (AWS) facilitated this trend, and was leveraged very effectively early on by Canvas. On the demand side, institutions have demonstrated an increasing interest in handing off hosting responsibilities and vendors have responded, happy to book the annual recurring revenue and, in cloud hosted, multi-tenancy models, simplify their software release cycles.

Figure 9: Percentage of New Implementations that are Hosted



Also new for the Fall Update is a longitudinal look at LMS decommissions by year. We've seen snapshots of this data in the five-year (Spring – Figure 4) and two-year (Fall – Figure 7) chord diagrams, but this is the first time decommissions have been plotted over a seven-year period. Blackboard's decline accelerated in 2016, jumping from 25% in 2015 to 43% of all decommissions in 2016. Angel's rate of decommissions looks to be slowing as the total number of Angel implementations gets smaller. Sakai and Moodle's combined share of decommission has been growing steadily since 2009, topping out in 2016 at 27%. Brightspace first appears on the graph in any meaningful way in 2013 and has kept their share of decommissions in the very low single digits since then.

Figure 10: LMS's Decommissioned by Year

IMPACT OF PAST SIX MONTHS ON OUR KEY MARKET THESES

Our view of the market remains consistent with what we saw in the Spring. The major trends we identified have maintained their trajectory. With regard to market share, we're seeing that Blackboard continues to decline while Canvas picks up new business at a rapid clip. Brightspace is holding steady with some notable gains based on Pearson LearningStudio migrations. The open source platforms are slipping a little bit but not precariously.

While we continue to watch Schoology based on strong feedback on their product fit in higher education markets, we have not seen new significant wins for that system.

In the spring, we commented on how more and more institutions are making elective decisions to switch LMS's, rather than a forced move due to a platform being decommissioned. That view has been borne out by data showing that the average life of LMS adoptions has dropped from 8.7 to 8.0 years. We fully expect to see that number continue to decline as more institutions evaluate new options and the costs of switching LMS's get less prohibitive. It's still a big endeavor to move a campus to a new LMS, but it's a heck of a lot easier than it used to be. It's also a great opportunity to revisit questions of online pedagogy and course design, professional development and support services.

Over the next six months we'll be looking to see how these trends continue to play out. We didn't see a lot of surprises over the last six months, but this is a dynamic market with a certain amount of

unpredictability. Blackboard has been making fitful progress toward the release of Ultra - no predictions there but something to keep an eye on as customers start piloting. Sakai and Moodle are both getting refreshed but it's hard to see their market positions moving significantly – their trend lines are not favorable. D2L is holding steady and we've seen them get some important wins, but there are open questions about their ability to hold on to some key accounts. We'll be watching them closely, there are many encouraging signs. Canvas is likely to see some moderate slow-down in growth as it gains more market share, but when you're winning nearly 70% of selection contests, some slippage is tolerable. But don't feel too bad for Instructure. They're having a good run, and as we explain in our new European LMS Market Dynamics report, excerpted in the Appendix, the European market seems ripe for some new entrants. Both Instructure and D2L are actively pursuing strategic expansion in the region and seeing some early successes.

THE NEXT SIX MONTHS

Looking forward we'll be taking a close look at the major LMS vendors in a special report slated for release in early 2017. The report will provide an overview of the major players in the field, their trajectory to date and their perceived strengths and weaknesses. We'll also take a high-level look at product roadmaps, where available, to see where things are headed.

In addition to the vendor profiles, we're looking to expand our international coverage as well. And of course, the Spring Report isn't too far out on the horizon.

Please feel free to direct any questions or comments on this report to the e-Literate team at eLitLMS@mindwires.com. If there are additional areas for which you'd like to see coverage, please let us know.

APPENDIX A: EXCERPTS FROM RECENT EUROPEAN LMS MARKET DYNAMICS REPORT

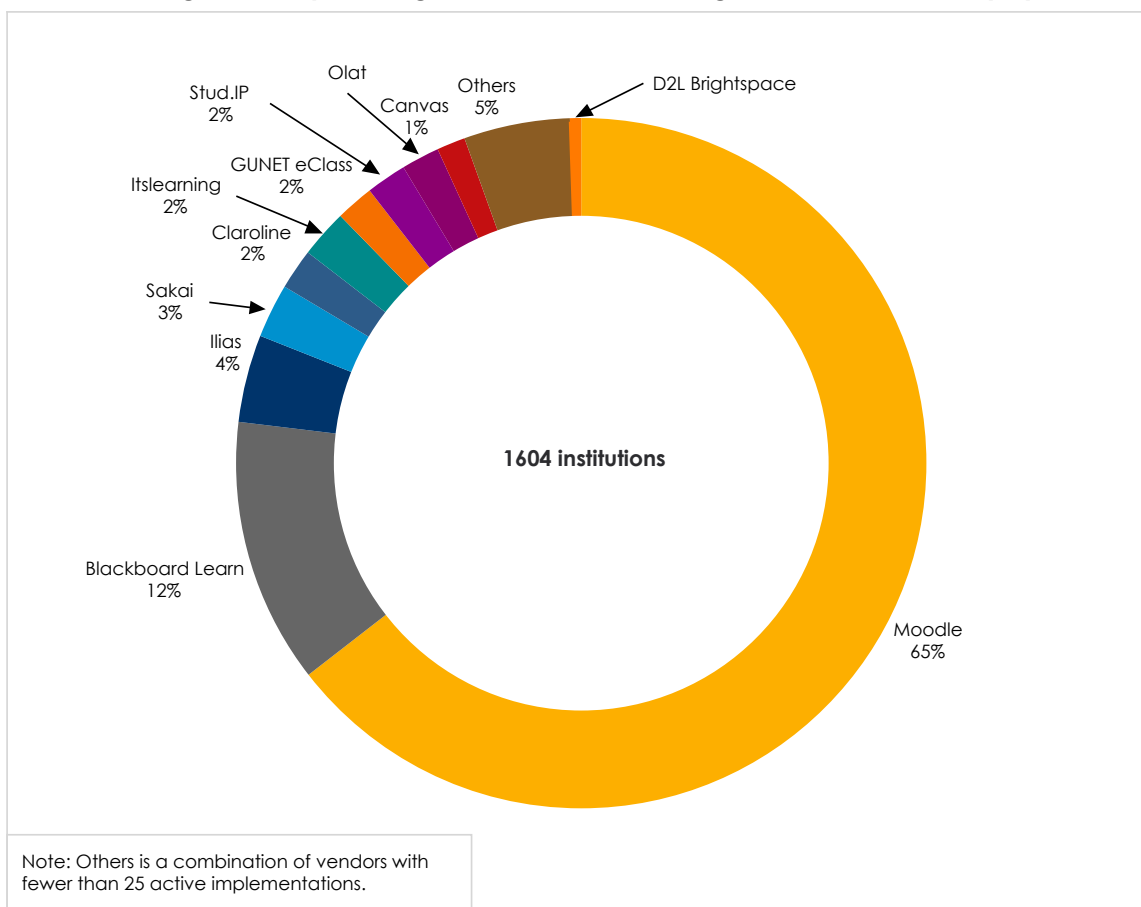
Please see below for excerpts from the first few pages of the European report. The complete report can be accessed by following this [link](#).

Overall, Europe has long been dominated by open source solutions in general, and Moodle in particular. While this remains largely the case, changes are afoot. New market entrants are gaining traction and several incumbents are seeing slower growth or no growth at all.

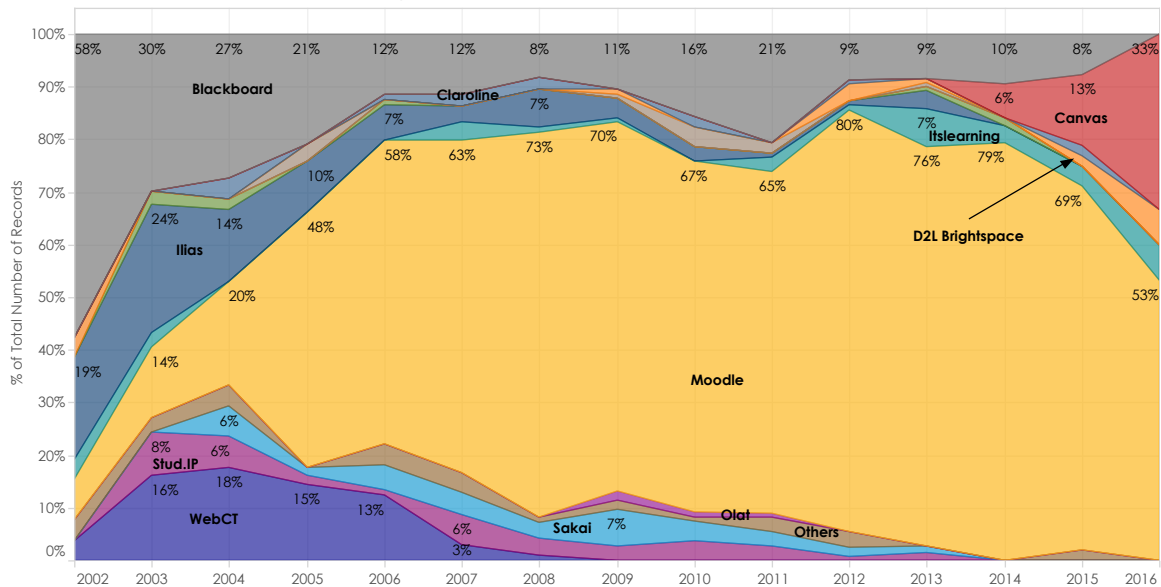
- Moodle has long dominated the European LMS market with 64% of institutions
- Blackboard Learn is the second most-used system, but it has fallen from a high of 30% more than a decade ago to just over 12% today
- Canvas has less than 2% of the market but is the fastest growing solution
- D2L has increased their market presence recently, and while they have only a handful of institutional adoptions in Europe, their LMS is frequently in the finalist lists for recent LMS selections
- There are several country-specific or region-specific solutions, such as itsLearning and its subsidiary Fronter, Stud.IP, Ilias, Olat and Claroline, but many of these solutions have been in place for a decade or more
- Despite tight privacy regulations, the use of managed or cloud-hosted LMS solutions is growing rapidly, with 44% of new implementations this year, leading to over 12% of total implementations

When taking Europe as a whole, there is one LMS solution that dominates all others in terms of number of institutional adoptions – Moodle. We should note at the outset that all data presented in this report is based on primary implementations – the LMS solution that is the primary or official solution for an institution. Almost two out of three European institutions use Moodle, followed by Blackboard, Ilias, Sakai, and itsLearning. All other LMS solutions have less than 2% of total market share each.

Figure A1: Fall 2016 LMS Market Share
Percentage of European Higher Ed Institutions Using Each LMS as Primary System

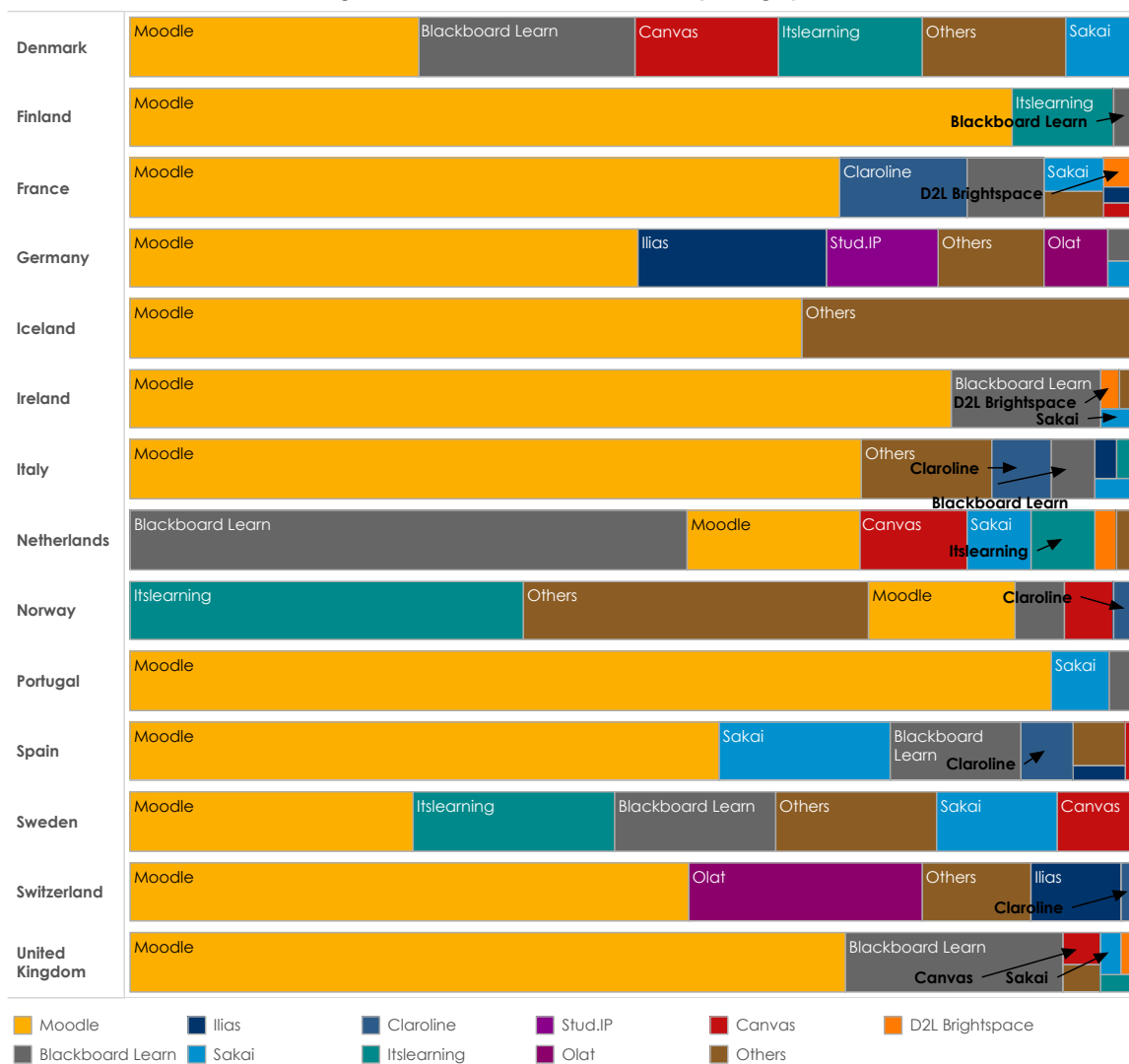


Beyond the static market share data, it is worth looking at the recent trends of LMS selection decisions within Europe to determine if the market is showing signs of significant change. The following view shows the percentage of new implementations for each calendar year to get a sense of which solutions are accelerating in terms of gaining new customers and which are slowing down.

Figure A2: Percentage of New LMS Implementations by Year in Europe

Despite European Union purchasing directives that affect most countries in the region, Europe can best be thought of as a geographic collection of national or sub-regional markets. The Nordic countries outside of Finland have very different purchasing patterns than the rest of Europe, as do France, Germany, and Spain.

Figure A3: Percentage of HE Institutions in Each European Country Using Specific LMS
Percentage of HE Institutions in Each Country Using Specific LMS



APPENDIX B: DATA-GATHERING METHODOLOGY

For the data and associated graphics used in this report, we have partnered with LISTedTECH to get exclusive access to their LMS market data. LISTedTECH has the most complete and valuable educational technology data set available. Their database lists educational companies, products, and institutional characteristics.

Most of the data is updated regularly by LISTedTECH's team and is validated at the source. Once a new data point is added, a second person reviews and approves the change. The wiki site uses a semantic plugin to help organize, sort, and classify the more than 1.37 million values.

The following statistics further describe the LISTedTECH wiki as of October 1, 2016:

- Number of Institutions with LMS data: 4,427 in the US and Canada (an increase of 232 from the Spring) and thousands more worldwide.
- Number of LMS records in total: 12,811 (up from 10,289 in the Spring)

The site includes data not only about the primary LMS supported centrally by an institution, but also about secondary systems, pilots, implementation dates, and decommission dates. Most information in this report is based on primary active systems. Where inactive (that is, decommissioned) systems are included, the graphic will highlight this fact.

Overall, the number of institutions in the United States and Canada for which we have LMS data jumped from 4,195 to 4,427, an increase of 232 institutions. Of these new schools, 166 are private for-profits and 66 were private not-for-profits. The number of public campuses remained the same. The addition of these new institutions and the distribution of LMS usage among them has, in some cases, an impact on changes we note from Spring to Fall. Where that is the case, it is called out in the text. While adding new records to the database can complicate the task of interpretation and analysis, we firmly believe that is a small price to pay for getting a more comprehensive view of the market. It's also worth noting that there are roughly three times as many changes in LMS implementations that take place in the Fall versus the Spring, all of which are captured in this Fall Update and provide for a more complete view of the LMS market for the calendar year 2016.

The LISTedTECH team controls for bias by validating the results with publicly-available external data sources when available, as well as targeting greater than 75% representation of institutions. These methods are used to prevent over-representation of any LMS solution. Due to the novel character of this form of data organization, we cannot guarantee a 100% accurate representation of the market. The reader should be aware that the primary value of the data is in showing relative trends and comparisons of different LMS solutions rather than absolute counts of systems.