Quarterly Goals and Reporting

Q3 - 2014/2015

Parsoid, Services, MediaWiki Core, Operations, Release Engineering, Multimedia, Labs, Engineering Community

Q3 - *Parsoid*

Quarterly Objectives Summary

Objective	Impact on Goal	Dependency	ETA	Status
Fix functionality and correctness bugs that affect VisualEditor	Roundtrip testing accuracy stable at 99.8% (if false failures are fixed, would be closer to 99.9%)		Ongoing	All VE Q3 blocker + some Q4 bugs fixed
Reduce generated HTML size	43% reduction in [[Barack Obama]] output	VE + other Parsoid clients	Feb 2015	• Unused data stripped from template content • Eliminated duplicated HTML from <ref>s
Work towards Parsoid-HTML read views (stretch goal)	Improved visual diffs Language variants rendered Cite customized via CSS	Core, RESTBase, VE	Ongoing	Marginal progress beyond whatever achieved as part of first objective.
Initiate work to scope template output (stretch goal)	Parsing performance improvements	Community Engagement	End 2015?	Wiki pages drafted; Wikimania talks submitted
Make the Parsoid cluster more stable	Stable memory usage graphs in Ganglia. Load spikes correlated with actual traffic.		Feb 2015	• Handling more pathological pages • Reliable timeout handling and process restarts • Eliminated memory leaks
Gather performance metrics	Performance regressions easier to detect.	OPW	Mar 2015	wt2html and html2wt endpoints instrumented in detail + dashboards established

Q3 - *Parsoid*

Quarterly Objectives Success

Sustained focus on visual editor bug reports and blockers helped us fix reported issues as they cropped up.

Our fairly robust test infrastructure has been key to the smooth regular deployments and catching problems early. That said, we nevertheless identified a testing hole (now fixed) after VE's migration to RESTBase. But, given that the bug could have caused serious page corruptions, it also highlighted the remarkable accuracy of our selective serialization strategy.

OPW intern (Christy Okpo) helped us tackle previously neglected task of production performance instrumentation.

Q3 - *Parsoid*

Quarterly Objectives
Miss

Our goals and targets are more ambitious than what we can realistically achieve with our team size and composition. Learning to scale down ambitions. But, having Tim Starling join the rebranded parsing team helps here.

The long tail of small things to fix is long / endless (second system problem). It is equally important to (a) enable read views with Parsoid HTML (b) make forward progress enabling tools to fix broken wikitext on pages (c) fix wikitext / template processing model -- this more fundamental work on wikitext improvements keeps getting pushed back.

Q3 - Services

Quarterly Objectives Summary

Objective	Impact on Goal	Dependency	ETA	Status
RESTBase deployment	Production deploy of RESTBase with Parsoid HTML and metadata storage	Operations	Mid-February	https://rest.wikimedia.org/en.wikipedia.org/v1/?doc - 15ms mean HTML revision load time - No SPOF, horizontal scaling, multi-DC
VE speed-up	- Store all current article revisions for low latency access - Reduce HTML size by at least 20% - Provide low-latency public REST API	Parsoid Editing Operations	End quarter	VisualEditor HTML mean load time reduced by **36%.** Mean HTML size reduced by **~35%**. Further significant speed-up coming with VE loading HTML directly from RESTBase (currently live on mw.org).
Section editing and retrieval API	Research and prototype section-level edit and view API in collaboration with Parsoid, Mobile and VE	Mobile Editing Parsoid	End quarter / next quarter	Research and design work, but no implementation yet.

Q3 - *Services*

Quarterly Objectives Success

RESTBase performs really well: ~12ms mean HTML revision load times in production; 10k req/s peak throughput on six boxes. This enables high volume use and consistently low latencies.

API versioning guidelines and Swagger API docs have been well received, and are being adopted by other teams. We now have a flexible and performant API proxy which lets us expose internal services in a uniform and well-documented external API.

We have made some progress on streamlining the service development & deployment pipeline. We developed shared service infrastructure (libraries like service-runner, a service template, standards for testing, metrics & logging), and support other teams in Citoid, Apps, Graphoid service development. Marko Obrovac is driving much of this work.

Q3 - *Services*

Quarterly Objectives
Miss

The section edit API work was slightly delayed by deployment-related work taking longer than expected & tying up limited team resources. We have researched issues and developed a plan for the first iteration with the Parsoid and VisualEditor teams, which is our top priority for Q4.

Service deployments still use more time and resources than we'd like. We have made some progress on shared infrastructure, but there are still long lead times and heavy dependencies on operations for configuration and setup. We hope to improve this situation in collaboration with Operations and Release Engineering in the coming quarter.

Q3 - *MediaWiki Core*

Quarterly Objectives Summary

Objective	Impact on Goal	Dependency	ETA	Status
Modern authentication framework for MediaWiki	Re-design MediaWiki authentication process to allow more complex authentication flows	RfC review	20??-??	Implementation underway; ETA unknown as this will not be top priority in Q4
Service-oriented architecture authentication	Document use cases for authentication and authorization by various non-MediaWiki consumers	Services team Features teams	20??-??	Not worked on; a lighter solution was found for the immediate needs of RESTBase
Wikidata query service	Produce a working prototype of a graph search tool in the style of WDQ with a clear plan for production scaling		2015-06	Implementation underway; progress delayed by unexpected need to select new graph database in Q3
Multi datacenter MediaWiki	Document impediments to active write-active read multi-DC operation; Begin removing those impediments	RfC review	2015-06	Implementation underway
SUL finalization	Support the implementation of SUL finalization	Community Liaison Stewards	2015-05	On track

Q3 - *MediaWiki Core*

Quarterly Objectives Success

Inter-team communications were greatly improved by having a full time interim Product Manager who was included in the PM team meetings. One PM for all of Platform will probably not be enough to successfully manage this communication for all teams in the Platform group but it's a great start.

The new Phabricator based process for signaling that an RfC is ready for discussion made scheduling discussions for both AuthManager and Multi-DC projects much easier than past workflows.

Changing the weekly meeting format from a report-up workflow to a topical discussion highlighted fragmentation of focus of the team members. This led to detailed discussions of possible solutions and the decision to reorganize into separate teams with more narrow focus starting in Q4.

Q3 - *MediaWiki Core*

Quarterly Objectives
Miss

Development across all projects was slowed because we took on too many projects, often assigning only a single full time developer. Reorganization into separate teams should improve focus but we still have some staffing challenges to overcome.

WDQ was set back significantly when the company developing the graph database was acquired. There are risks when working with bleeding edge technology.

The AuthManager project exposed some disconnects between the priorities of the team (developers and Product Manager) and those of management outside the team. Reaching agreement on goals prior to starting work on a project may reduce such tension going forward.

SUL Finalization should have been called out as a project for Q3 rather than being treated as something that would "just take running some scripts". Honestly it should probably be a Top N project for the whole WMF organization.

Q3 - Operations

Quarterly Objectives Summary

Objective	Impact on Goal	Dependency	ETA	Status
Scale up HTTPS infrastructure	Scale up HTTPS infrastructure to be able to serve HTTPS-by-default.	Procurement (hardware vendors) Analytics (udp2log)	2015-04	Capacity expanded according to measurements. Additionally, HTTPS performance improvements & SPDY were rolled out.
IPsec on cross-data centre links for private data	All PII (cache and logging traffic) between Wikimedia data centers is encrypted using IPsec ESP	HTTPS scale-up goal (same infrastructure)	2015-04	Still under testing, stability problems found. Expected to complete near end of April.
Virtualization for miscellaneous servers at codfw	Virtualized cluster at codfw set up. At least 2 virtual services migrated to the virtualization cluster	Procurement (hardware vendors)	2015-04	Virtualized clusters at both codfw & eqiad are set up. Services on track to be migrated.
Ability to serve core site services (wikis) at codfw	MediaWiki application servers deployed. MediaWiki page loads functional. Capacity meets or exceeds eqiad's application cluster.	Procurement (hw vendors) MW Core (config changes) Release Engineering (deployment system)	2015-04	MediaWiki application servers and dependencies other than ElasticSearch and RESTbase deployed.
New external monitoring for performance and uptime metrics	Redefined availability metrics monitored from the start of Q4, and available and reported in the Q4 quarterly review.	Performance engineering (requirements collection) ECT (community consult) Procurement/Legal (monitoring SPs)	2015-05	Multiple providers evaluated. Contract with "winning" provider executed, monitoring has been setup.

Q3 - Operations

Quarterly Objectives Success

Our project of scaling-up our HTTPS infrastructure exceeded our stated goal. Not only was the infrastructure expanded to meet the required capacity, but also many additional performance improvements (including SPDY) were implemented. Brandon Black was instrumental in this work.

We were also able to complete the buildout of the MediaWiki application server cluster in the new data center (codfw), despite the large scale infrastructure and many components. Giuseppe Lavagetto led this project and coordinated with MediaWiki Core to resolve configuration and deployment challenges successfully.

Q3 - Operations

Quarterly Objectives
Miss

We were unable to meet the deadline for full IPsec deployment. Insufficient subject matter expertise was available until later on in the quarter, so several technical blockers didn’t surface in time.

Our goal of deploying a virtualization cluster in codfw was also at risk due to delays at various stages of the procurement process, which resulted in the delivery of hardware very near the end of the quarter. We’ve started hiring for a Procurement Manager which will streamline this.

Q3 - *Release Engineering*

Quarterly Objectives Summary

Objective	Impact on Goal	Dependency	ETA	Status
Beta Cluster stability	• Green nightly builds on Staging • Stable uptime metrics • By team test history	Operations	May 2015	• First pass at uptime metrics • Zero cherry-picks on Beta Cluster • Ops using BC for testing
Successfully re-integrate MediaWiki releases	• Ontime release of MW 1.25	API Team (nee MW Core)	May 25th	• Chris released 1.24.2 and 1.23.9 tarballs
Isolated CI instances	• We use single-use test instances for CI	Operations	July, 2015	• Packaged Zuul • Procuring Hardware • Arch review by Chase
QA Support for Editing and Apps	• Increased the stableness for VE browser test this quarter	Editing and Apps	Ongoing	• VE and Editing have quality releases
Team process improvements	• began conversation with TPG, working on team offsite (pre-Hackathon)	Team Practices Group	End of May	• On track with plan, culmination atl offsite in May.

Q3 - Release Engineering

The number of people involved with Continuous Integration maintenance has grown: special note to Kunal from MediaWiki Core Team and Timo Tijhof (as always).

WMDE is independently maintaining their jobs based on WMF templates.

The architecture review of the Isolated CI Instances work by Ops (especially Chase and Andrew) was very thorough and provided a lot of good suggestions.

Q3 - *Release Engineering*

Quarterly Objectives Miss

We were unable to create the Staging cluster in just one quarter. This is mostly due to the unexpected issues that tend to come up. The support from Ops (especially Yuvi) was great, but sometimes things take longer than planned to do them right. And the goal is worth it (demonstrable cleanup which is better for everyone, and “Beta Cluster as a Service” - better name coming...).

Our goals from last quarter were predominantly all > 1 quarter long (hence all the red). Big projects are not inherently bad, but breaking them down into smaller sections can help gain traction/buy-in/support from others.

Q3 - *Multimedia*

Quarterly Objectives Summary

Objective	Impact on Goal	Dependency	ETA	Status
Upload Wizard	Refactoring and unit testing Tracking funnel metrics over time		2015-03	The objective is complete, a tremendous amount of cleaning up happened
JS error logging	Get visibility on which main errors/bugs are responsible for the Upload Wizard funnel drops		2015-04	Completed the week after the end of the quarter and the disbanding of the team
Platform	Investigate a better solution for thumbnail storage			Not worked on

Q3 - *Multimedia*

Mark Holmquist's relentless focus on UploadWizard helped us greatly reduce the technical debt this extension is affected by. Mark kept a sharp focus on that objective despite the distractions that came our way during the quarter.

Gergő broke new ground on JS error logging. The expertise he's developed in that area will prove invaluable for the future of Wikimedia engineering. He kept working to complete this task despite the team being disbanded.

Q3 - *Multimedia*

Quarterly Objectives Miss

Originally we expected to deliver JS error logging for everything, but that objective was revised mid-quarter to focus on UploadWizard. Even that was slightly too much to fit in the quarter. Our main mistake was to attempt to implement the ideal complete system perfectly instead of focusing on a minimum viable product.

This quarter saw us putting out a lot more unplanned fires than usual. One of us having to serve as substitute PM also reduced our bandwidth more than we anticipated. We overcommitted when we estimated our quarterly goals, which is why we left an objective completely untouched.

Q3 - *Labs*

Quarterly Objectives Summary

Objective	Impact on Goal	Dependency	ETA	Status
Horizon dashboard proof-of-concept	OpenStack Horizon available read-only to Labs users.		2015-04	Horizon dashboard has been made available with basic functionality.
Designate for Labs DNS	Replace our internal DNS (PowerDNS) code with OpenStack Designate.		2015-04	Installed and being tested. Due to an additional FQDN change, deployment was changed to opt-in by users, prolonging the migration.
Storage capacity & redundancy expansion	Expand storage by 18 TB of usable space. All data replicated to codfw. A documented and tested procedure for (manual) storage failure switchover in place.	Procurement (hardware vendors)	2015-04	Storage capacity was expanded, a cold spare deployed. Documentation and testing not yet complete. This will rollover into the next quarter goal (ToolLabs stability).

Q3 - *Labs*

The team's goals were nearly met, despite a particularly difficult quarter for the infrastructure and team due to unexpected incidents and maintenance work (see next slide).

Yuvi Pandian's collaboration with the Release Engineering team on its goal of Beta cluster stability was fruitful and resulted in significant improvements in the puppetization of Beta, addressing long-standing problems and technical debt.

Q3 - *Labs*

Quarterly Objectives Miss

While there was good progress on the team's goals (both internal, as well as external commitments), limited extra effort was dedicated to longer-term improvements, as the team had to spend a significant amount of time fire-fighting.

The goal of deploying Designate for DNS, although nearly met, was modified slightly to take advantage of the opportunity to make an additional needed change. However this changed the migration to opt-in by users, delaying the completion.

Labs' and Tools' overall availability was considerably poor this past quarter with multiple outages for subsets of instances, and performance problems on underlying storage infrastructure (see the Appendix). This affected both foundation teams (e.g. Beta) and the engineering community (Tools).

This is being addressed by dedicating the next quarter to availability improvements and availability measurements, as well as engaging into discussions for increased staffing for the next fiscal year.

Q3 - *Engineering Community*

Quarterly Objectives Summary

Objective	Impact on Goal	Dependency	ETA	Status
MediaWiki Developer Summit	Successful organization of the first MediaWiki Developer Summit	Engineering & Product Management: main themes, budget, contract approvals.	2015-01	A success, according to the participants' survey and our lessons learned.
Data & developer hub	A plan agreed and documented	Design: agree on plan for Blueprint skin. MediaWiki Core: agree on plan for API sandboxes. Various stakeholders: agree on plan versus doc.wikimedia.org.	2015-03	We focused on prototyping first. We have a broad plan that needs to be written down and checked with the stakeholders.
Phabricator migration	Consolidate Phabricator as project management tool	Release Engineering: fixing bugs in our local extensions. Operations: deploying updates.	2015-03	Good progress overall. Some teams still using Trello. Scarcity of maintenance resources.
Engage with established technical communities	Identification of top 5 technical partners and first conversations established	None	2015-06	Not started.

Full ECT quarterly report: https://phabricator.wikimedia.org/T94165

Q3 - *Engineering Community*

After organizing the MediaWiki Developer Summit successfully, Rachel Farrand compiled our lessons learned with recommendations for the next edition that are being integrated in ECT's future event plans and the 2015-16 budget ask (i. e. 3 days event instead of 2).

S Page joined our team in January and broke the vicious circle of theoretical discussions around the Data & Developer Hub by putting together a prototype with real content. This is forcing stakeholders and open tasks to be more specific and less opinionated.

S Page volunteered a Trello - Phabricator migration script, and he has driven the migrations of the Collaboration and former Growth teams, extending an offer to the remaining teams using Trello.

Q3 - *Engineering Community*

Quarterly Objectives Miss

Rachel Farrand and Quim Gil struggled getting clear objectives and main themes with Engineering and Product management, and we were late when announcing the basic plan to our developers. Correction: ECT to own budget and organization of the Summit and hackathons, starting public planning sooner.

S Page has been contacting the right people in Core, Design, and other areas in order to obtain quick tactical progress with the Data and Developer Hub. However, the lack of a written plan and formally agreed dependencies keeps the resourcing of this important project out of the official plans of these teams. Correction: agree the plan with these teams, including committed resourcing.

Quim Gil had proposed 20% Phabricator maintenance time for Chase Pettet (Ops) and Mukunda Modell (RelEng), but didn't follow up for confirmation. While Chase agreed this time with his team, Mukunda has been totally invested in RelEng work. Correction: transfer Phabricator ownership to Greg Grossmeier (RelEng).

Appendix

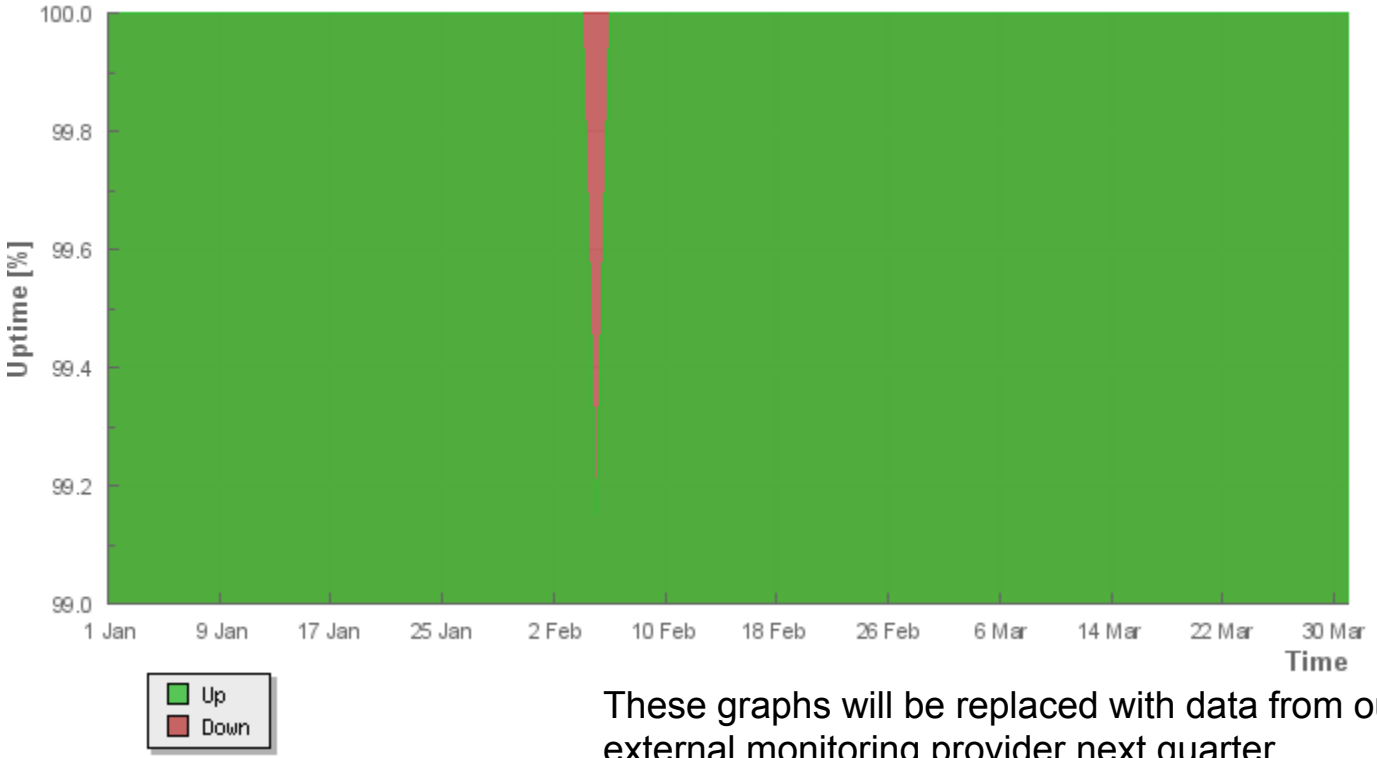
Other Operations accomplishments

- Reunified/renewed network support contracts
- LabsDB PII sanitization audit & refactor
- Completed (Beta) Labs/Production Puppet reconsolidation [with RelEng]
- Deployed Apertium [with Language]
- Assisted in RESTbase deployment [with Services]
- Decommissioned LSearchd cluster
- Audited all cluster account access
- Consolidated Apache user to uid:gid 48/48 across our infrastructure
- Provisioned two additional US network POPs (Dallas, Chicago)
- Migrated 167 out of ~1075 servers to Debian Jessie
- Shuffled most Tool Labs services to be redundantly distributed across VM hosts
- Scaled Graphite to multiple machines and expanded it to codfw
- Removed SPOF of memcached servers in a single rack
- Deployed Zotero and Citoid [with Services]
- Assisted in Wikidata Query Service graph db selection
- Expanded Labs by 3 additional machines
- Replaced udp2log based webstatscollector by Hive
- Upgraded authoritative DNS servers to gdnsd 2.2.0
- Deployed SPDY, OCSP stapling on HTTPS infrastructure

Other Operations accomplishments

- Responded to GHOST security vulnerability and rebooted most servers
- Migrated esams network to new higher capacity switches
- Made Debian Jessie available in Labs
- Setup RIPE Atlas anchors
- Started the practice of knowledge sharing in (3) Ops Sessions in Hangouts
- Performed architecture review for Isolated CI instances [with RelEng]
- Expanded eqiad Swift cluster with 3 extra storage nodes
- Setup backup Labs infrastructure in codfw
- Replaced Hadoop Namenodes with new hardware
- Upgraded Hadoop to CDH 5.3

Availability: Watchmouse, enwiki



These graphs will be replaced with data from our new external monitoring provider next quarter.

User-facing incidents (1/2)

Date	Time frame	Summary	Impact
2015-01-03	17:07 - 13:05 (intermittent)	High load on Parsoid due to problematic page on urwiki	Intermittent timeouts on *Parsoid* service
2015-02-05	17:10 - 18:06	**Full site outage** triggered by switch power outage, prolonged by new logging code and memcached proxy problems	17:10 - 17:47: uncached pages would not load for *all wikis/users* for about 37 minutes
			17:10 - 18:10: *no user logins* possible for about one hour
2015-02-17	17:00 - 23:15	Disk controller hardware failure on one labs VM server (virt1005)	*8% of Labs instances* unavailable for 3 hours
			Beta Labs MySQL server unavailable for 6 hours
2015-02-24	05:30 - 08:00	One labs VM server (virt1012) loses network connectivity due to hardware failure	*12% of Labs instances* unavailable for 2.5 hours

User-facing incidents (2/2)

Date	Time frame	Summary	Impact
2015-02-27	02:30 - 03:05	One labs VM server (virt1012) loses network connectivity due to server hardware failure	*14% of Labs instances* unavailable for 30 minutes
	05:20 - 08:45	The same failure recurs. Upgrade work to prevent future failures causes further unavailability	*14% of Labs instances* unavailable for 2 - 3 hours
2015-03-24	09:30 - 09:50	A network switch crashed and blocks traffic	*Phabricator and Graphite* unavailable for 20 minutes
2015-03-30	21:00 - 22:00	NFS file system maintenance switch causes problems for older Precise Labs instances which didn't recover	*Ubuntu Precise Labs instances* remained unavailable for 1 hour
2015-03-31	05:37 - 06:55	NFS file system maintenance causes overload problems	I/O slow and/or completely unavailable for *Labs NFS users*

For additional details, see: Incident documentation

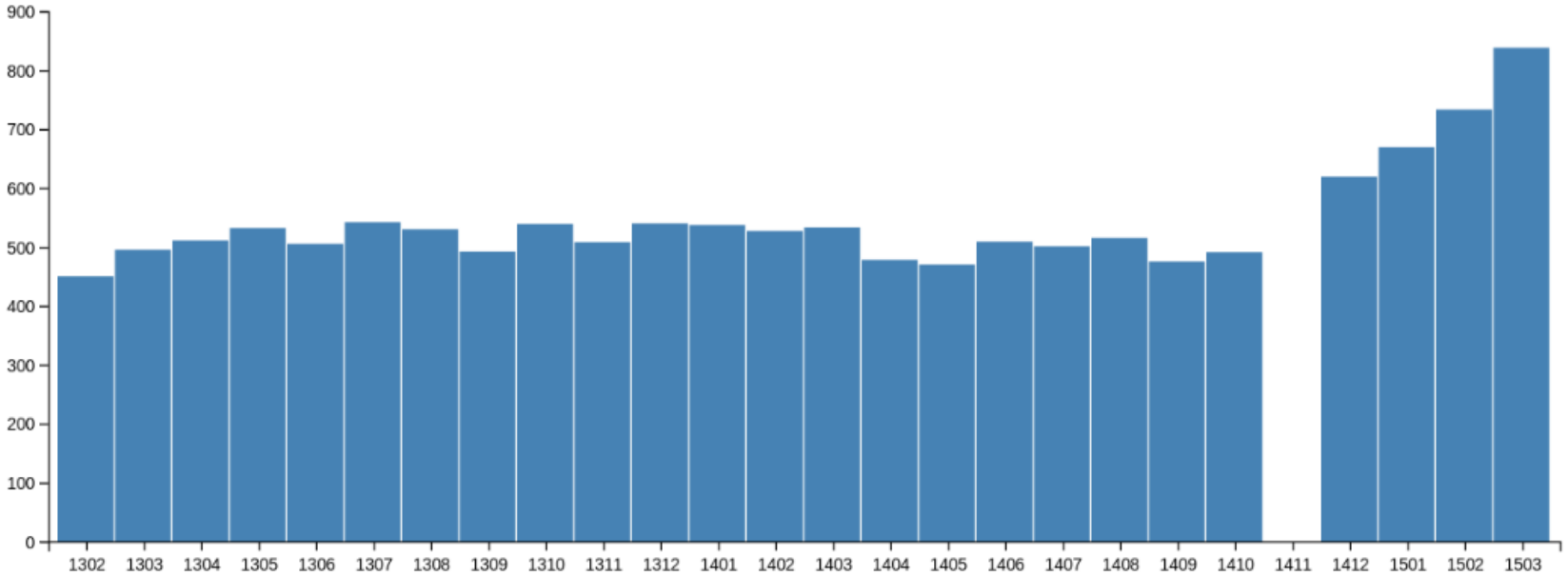
MW Dev Summit lessons learned

- Three day event instead of a two day event. Two days will be similar to this year, one day will be hacking and networking.
- Start using Phabricator earlier in the planning phase
- Create templates for etherpads/Phabricator for all sessions
- Organize keynotes further in advance
- Presenters of smaller sessions should spend less time on introductions and jump into the needed discussions; introductory materials should be posted in advance.
- Better food
- Encourage people to walk/share taxis

https://www.mediawiki.org/wiki/MediaWiki_Developer_Summit_2015/Lessons_learned

Phabricator adoption

Monthly active users in Bugzilla (from 2013-02 to 2014-10) and in Phabricator (from 2014-12 to last month).



https://www.mediawiki.org/wiki/Community_metrics#Reports

Trello - Phabricator migration

		Nov	Dec	Jan	Feb	Mar
Collaboration	Trello	0.5	0.75	0.75	1	1
Design	Trello	0.25	0.25	0.25	0.25	0.75
Mobile Web	Trello	0.25	0.25	0.25	0.25	0.25
Mobile Apps	Trello	0	0	0	0.5	0.75
Research and Data	Trello	0	0	0	0	0
Zero	Trello	0	0	0	0	0
Gather	Trello				1	1
Total		**50%**	**63%**	**67%**	**75%**	**79%**
Trello		17%	21%	21%	43%	54%
Mingle		33%	67%	92%	100%	100%
RT		0%	75%	75%	75%	75%
Bugzilla		100%	100%	100%	100%	100%

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0 Not started

0.25 Organized workboard, project management elsewhere

0.5 First sprint on Phabricator, syncing cards

0.75 Project management in Phabricator, legacy still elsewhere

1 100% Phabricator
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https://docs.google.com/spreadsheets/d/1UbVwfi4ECj9KMZwVEJLmwPXGB3SPk6PZfMirmWvf3T8/edit?usp=sharing