

Analytics Quarterly Review

March 2014



AGENDA

Introduction (5 mins)

Follow up to Strategic Plan (10 mins)

Research & Data/Q&A (40 mins)

Break (5 mins)

Development/Q&A (35 mins)

Prioritization (15 mins)

Conclusions/General Q&A (10 mins)



Asks of Audience

Understand how Research & Data's mission and operating model impacts you.

Understand how the opportunities and challenges of the development team drive prioritization.

Discuss prioritization for Development and Research & Data projects for the next 3 months.

Introduction



Group Structure

Development

Builds the infrastructure, tools and datasets that enable the organization and the community to easily access, process and act on our data in a way that is consistent with our values.

Research and Data

Supports the organization in making research-informed decisions, to better understand our editor community and projects, and to determine the impact of new programs and products that the Foundation is designing.

Follow Up to Strategic Plan



Reflection

Last Quarterly Review

“Everything I thought after 2 months was wrong”

Now

“I’m excited about what the team can accomplish
(but there’s a lot to do)”



Values

Transparency - all of our stakeholders need to understand what we're doing

Strategic Alignment- we need to do the right thing for the foundation

Flexibility - things change -- our Agile processes allow prioritization to change

Collaborative - our stakeholders participate in the prioritization process



Turnaround Plan

Stage	Main Objective	
Management Change	Select turnaround agent	
Situation Analysis	Develop preliminary action plan	July
Triage	Control and stabilize operations	↓
Business Restructuring	Focus Business for increased growth and performance	October
Return to Normal	Resume normal, albeit, improved operations and integrate with Community	↓ March



Focus Areas Updates

Staffing

- Research & Data has critical mass (5 Researchers + 1 Open Req)
- Development Team staffing complete (Welcome Kevin!)

Scope

- Participation, Readership and Fundraising Analysis consolidated in Research & Data
- EventLogging support transitioning to Analytics

Execution

- Research and Data operating model established
- Development is making progress on sustainable, predictable Agile execution model

Updates on Projects in Development
and R & D Sections

Looking Forward to Q4



Impact



How do we take our numerous projects and goals and combine them into a coherent purpose?



Focus and Balance



[1]

Finding a path through competing priorities,
requirements and goals is our challenge



Collaboration

How do Research & Data and Development work together?



- Teams are closely collaborating on high priority items for Q4
 - Editor Engagement Vital Signs
 - Mobile Metrics
- First team offsite in May in Zurich
 - Development and R & D together for 2.5



Community

How do we integrate better with the Community?



[1]

- We had our first community “incident” over lack of support for page views.
 - Bought some short term cover with a new server
 - Team members have more 1:1 integration
- R & D showcases and hack-a-thons are positive
- Opportunity for Improvement in Q4

[1] <http://blog.wikimedia.org/2012/02/07/first-san-francisco-meetup-of-2012/>



High Priority Initiatives

- Erik's asked us to work on two specific Epics
 - Editor Engagement Vital Signs
 - Mobile Metrics
- He's also asked that we add some features to Limn and make the dashboards discoverable
- These will be discussed in each team's section in more detail, but overview is here
- Will also be addressed in prioritization section



Editor Engagement Vital Signs



Summary

Discoverable, Daily Updated Dashboards to track key Editor metrics across all 800+ projects

Key Collaboration Points

- 1a. Research & Data defined Metrics
- 1b. Development built out infrastructure
2. Development/R & D integrates metrics
3. Development builds visualizations



Mobile Metrics

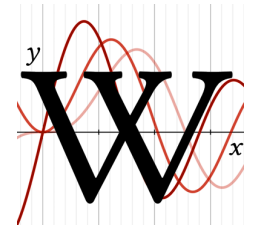
Summary

Adoption of mobile apps, tablet usage, browser share and other metrics

Key Collaboration Points

1. Technical Operations and Development builds out the data pipelines (Kafka) and the analysis infrastructure (Hadoop)
2. Research and Data works with Development to design and run the queries to provide the data

Research and Data



Q3 quarterly review

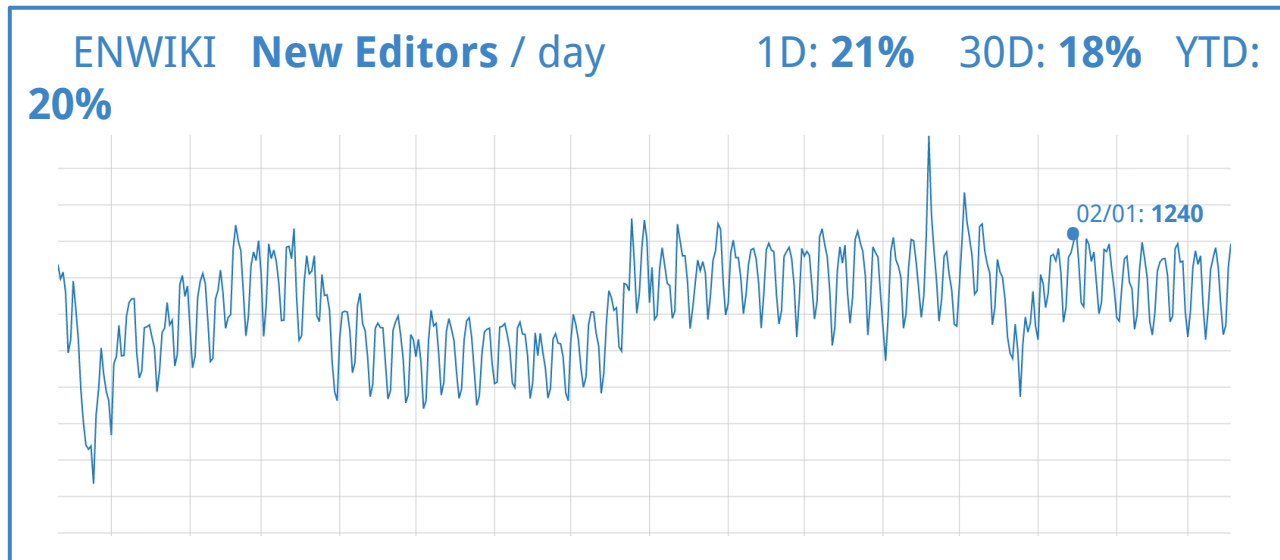
Q3

- **Metrics standardization**
 - **Focus areas**
 - **Other projects**
 - **Staffing**

Standardized metrics for editor engagement



Goal: Vital Signs



key project-level metrics for user engagement, community and content growth

using consistent definitions

aggregated daily / monthly

generated for every Wikimedia project

Metrics standardization: definitions

Research:Productive new editor

Productive new editor is a [standardized user class](#) used to measure the number of first-time editors in a wiki project over time who make [productive contributions](#). It's used as a proxy for [editor productivity](#), and to a lesser extent, [editor activation](#). A "productive new editor" is a [new editor](#) who saves revisions to [content namespace](#) pages that are not [reverted](#).

Contents [hide]
1 Discussion
1.1 Excluding edits to deleted content
1.2 The n productive edits threshold
1.3 The t time cutoff
1.4 Time to revert cutoff
1.5 Limitations
2 Analysis
2.1 German Wikipedia
2.2 English Wikipedia
2.3 Spanish Wikipedia
2.4 French Wikipedia
2.5 Polish Wikipedia
2.6 Portuguese Wikipedia
2.7 Factor comparison of n and t
3 Usage
4 References

Discussion [edit]

Excluding edits to deleted content [edit]

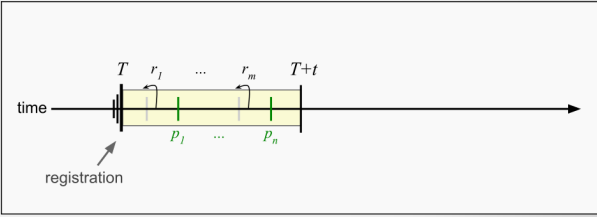
Spammers and other non-productive new editors tend to create articles that are non-productive and those articles tend to be deleted rather than the edits to the articles being reverted (and therefore excluding them from the [productive edit](#) criteria). Edits to articles that are deleted by the end of a new editor's first week since registration are *not* included in counts of productive edits.

The n productive edits threshold [edit]

Like choosing an n for any metric based on counts (e.g. [new editor](#) and [active editor](#)), choosing a threshold is somewhat arbitrary. Choosing a higher threshold will result in a

Metrics standardization

Productive new editor



Specification

A **productive new editor**(n, t) is a **new editor** who completes at least n **productive edit(s)** within t time since **registration** (T).

WMF Standard

- $n = 1$ productive edit
- $t = 1$ day

Measures

Editor productivity

Aliases

Productive newcomer

Related metrics

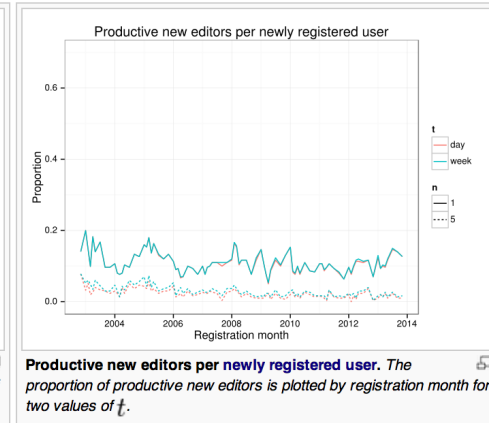
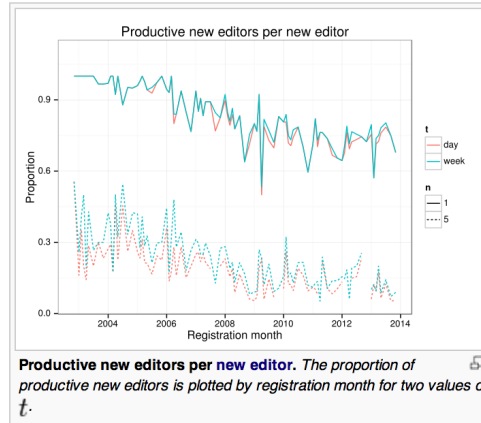
[Newly registered user](#) • [New editor](#) • [Productive edit](#)

Status

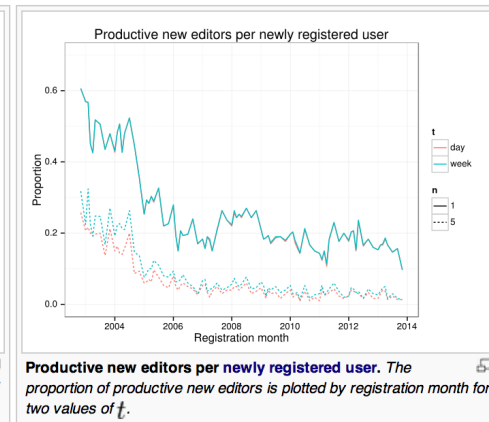
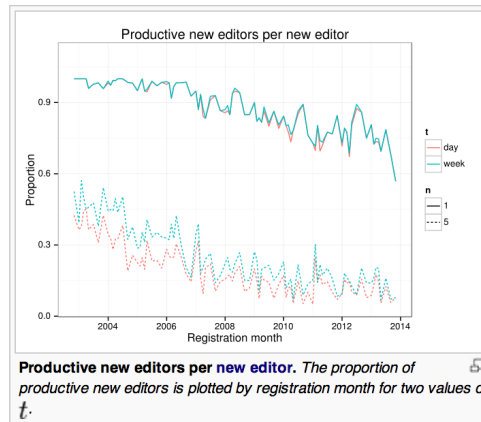
completed ■

Metrics standardization: analysis

Spanish Wikipedia [\[edit\]](#)



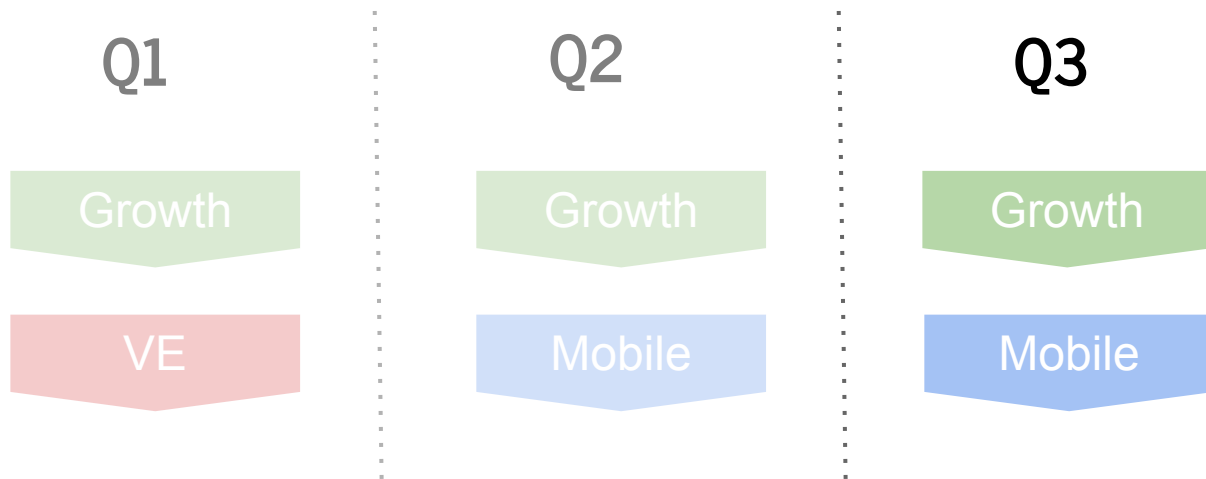
French Wikipedia [\[edit\]](#)



Metrics standardization: timeline

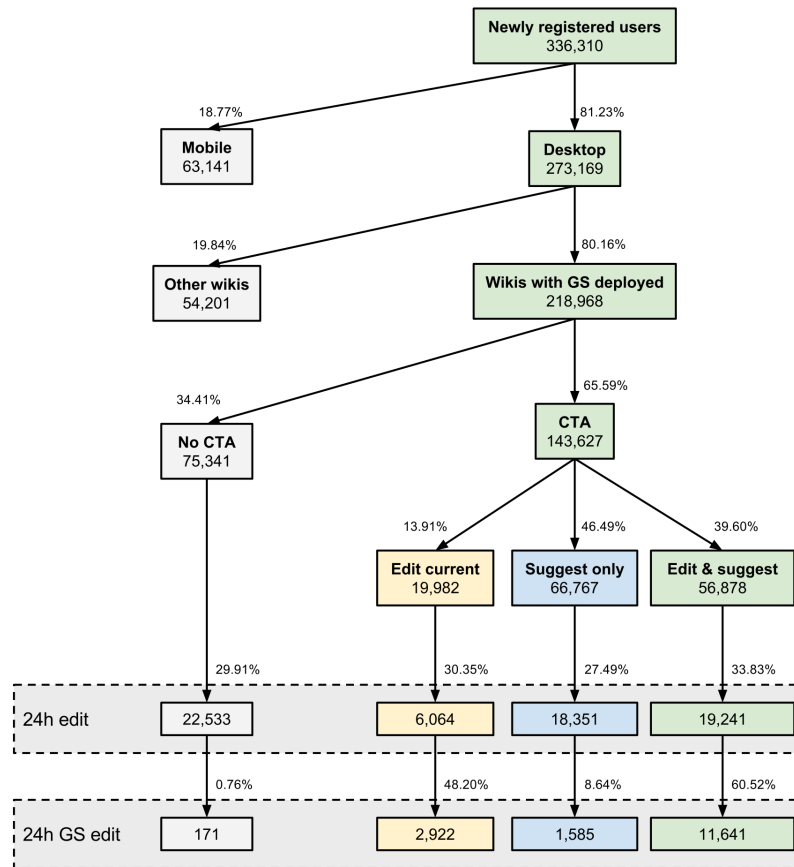


Focus areas



Focus areas

Growth



Ad hoc analysis of onboarding workflow (GettingStarted)

https://meta.wikimedia.org/wiki/Research:Onboarding_new_Wikipedians/Rollout

Focus areas

Growth

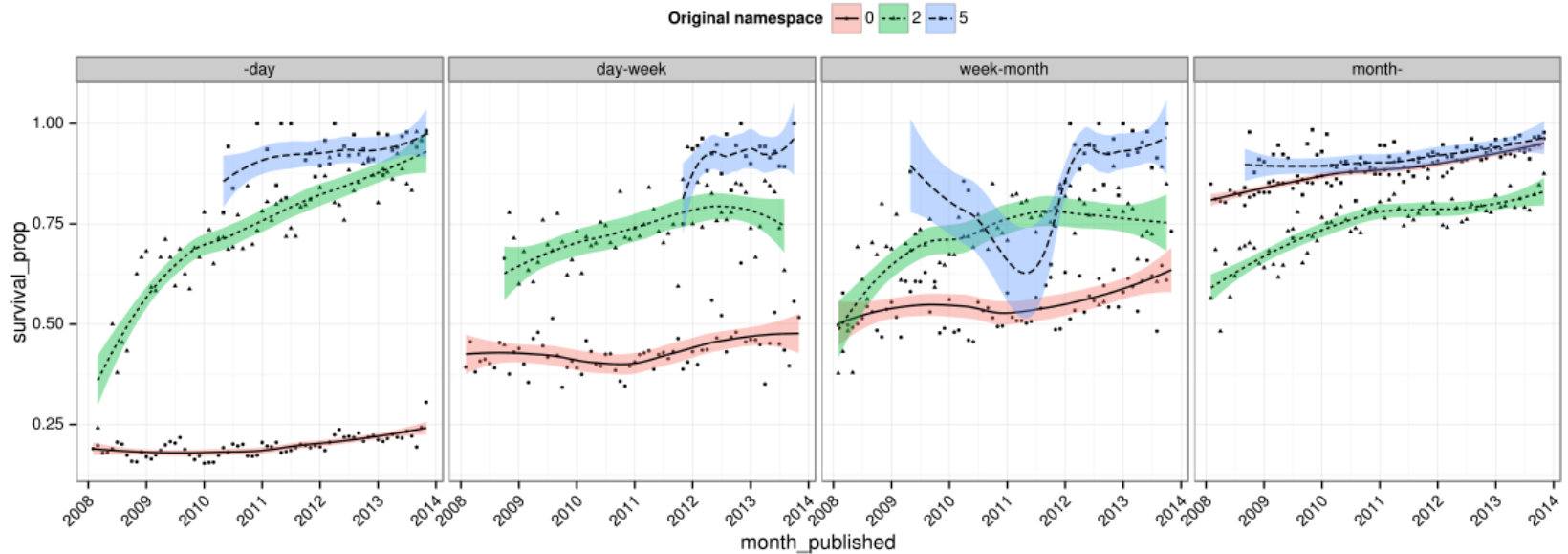


Volume and productivity of anonymous contributors

https://meta.wikimedia.org/wiki/Research:Anonymous_editor_acquisition

Focus areas

Growth

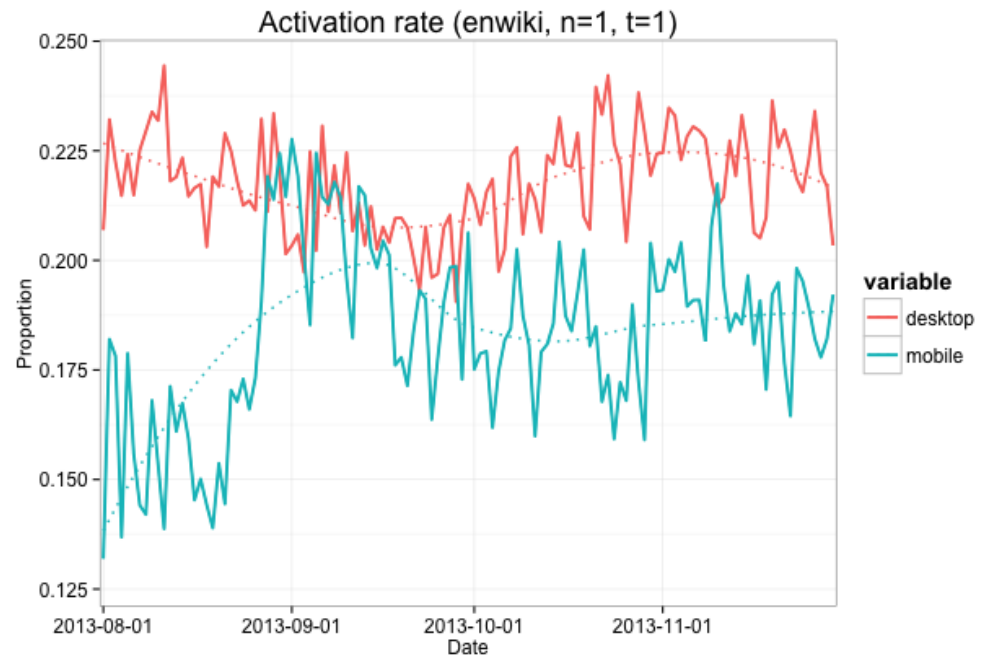
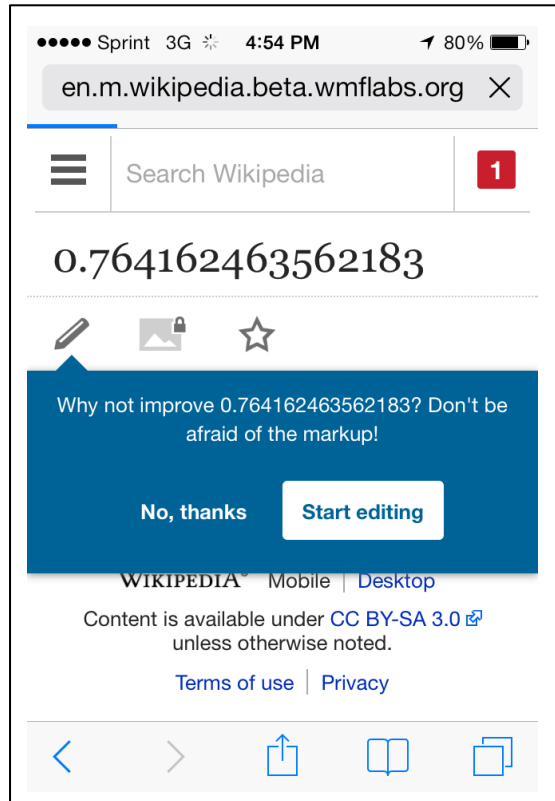


Article creation (and deletion) trends

https://meta.wikimedia.org/wiki/Research:Wikipedia_article_creation

Focus areas

Mobile

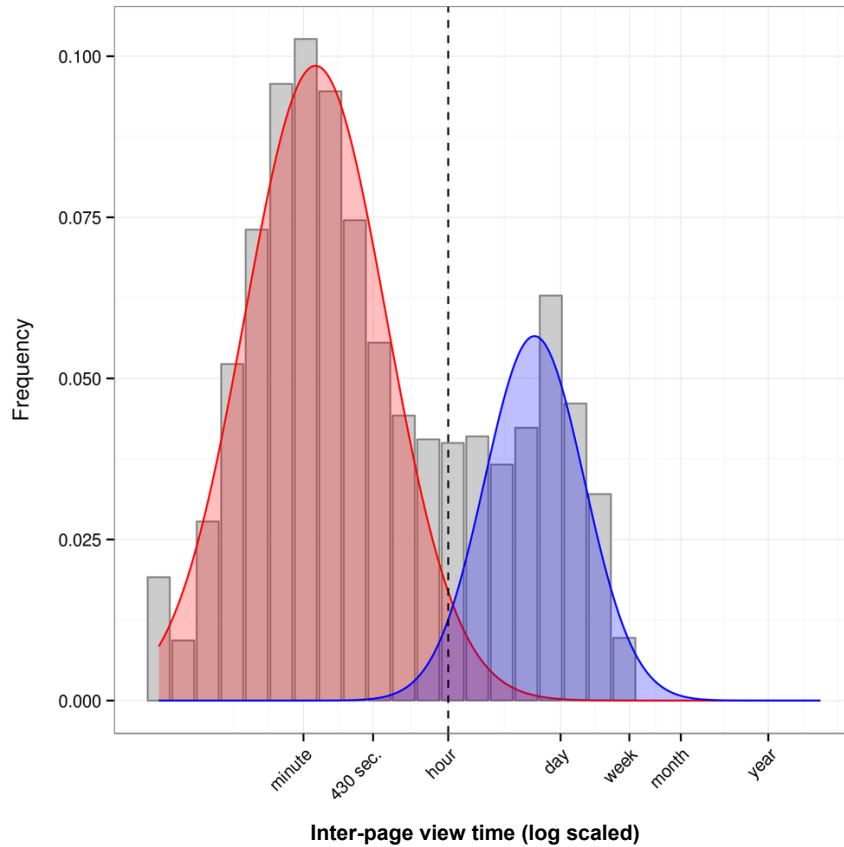


Mobile user acquisition: exploratory analysis and A/B testing

https://meta.wikimedia.org/wiki/Research:Mobile_editor_engagement

Focus areas

Mobile



Analysis of mobile browsing sessions

https://meta.wikimedia.org/wiki/Research:Mobile_sessions

Other projects

2013 traffic trend analysis

Performance A/B tests

Platform

Privacy / data retention

Legal

Fundraising knowledge transfer

Fundraising

Ad hoc support for other teams + community requests

VE

Core Features

UX

Comm

Community



Staffing

Q1



Q2



Q3



New



New



New

Sahar

Team coordination

Task tracking on Trello

Weekly research group meetings

Semi-weekly standups

Public monthly showcase

The image shows a screenshot of a Trello board titled "Research and Data" under the "Wikimedia Foundation" workspace. The board is organized into four columns representing different stages of task completion:

- Input Needed:** Contains five cards, including "Improving meta documentation structure (Grants & Research collab)", "Extract user screen sizes", "Personal bar clickthrough", "Mobile user survey [beta]", and "Mobile user survey [stable]".
- Staged:** Contains four cards, including "Analysis of Preference logged data", "Mobile user trajectories", "Live user: standardized definition", and "Bots: supportive analysis".
- In progress:** Contains five cards, including "Data analysis for left navbar test", "Requirements for research internships", "Account registration data audit", "Draft JD for mobile research req", and "Publish Article Feedback dump".
- Completed: March 2014:** Contains four cards, including "Wrap up documentation pages for Metrics Standardization for March showcase", "CSCW '14 report", "Support for TWA (Grants) analysis", and "Data request from Michael Tsikerdekis, PhD student at Masaryk University".

Each card displays a title, progress bar, comments, attachments, and assignees. The board interface includes a top navigation bar with the workspace name, a "Public" status indicator, and a "Show sidebar" button.

Q3 retrospective

Delivered stage 1 metrics (analysis and requirements)

Supported key focus areas (growth & mobile)

Worked on other large unanticipated projects

Worked on team process / coordination

Q4

- **Metrics standardization**
 - **Topical research**
 - **Focus areas**
 - **Staffing**

Metrics standardization: timeline



Topical research

- a. Understanding mobile users
- b. Growth outside of enwiki
- c. Editor retention and trajectories
- d. Who are anonymous editors

Topical research

a. Understanding mobile users

How do mobile users access Wikimedia sites?

[country · project · device · OS · source]

In which countries / languages mobile editor growth is outperforming desktop growth?

Org

Mobile

Zero

Growth

Topical research

b. Growth outside of enwiki

Which projects are seeing growth/increased retention outside of enwiki?

Are editors active on multiple wikis / migrating towards other wikis?



Topical research

c. Editor trajectories and retention

What are the typical trajectories of an active or power editor?

What are the typical trajectories of a mobile vs desktop editor?

How do trajectories affect survival?



Topical research

d. Who are anonymous editors

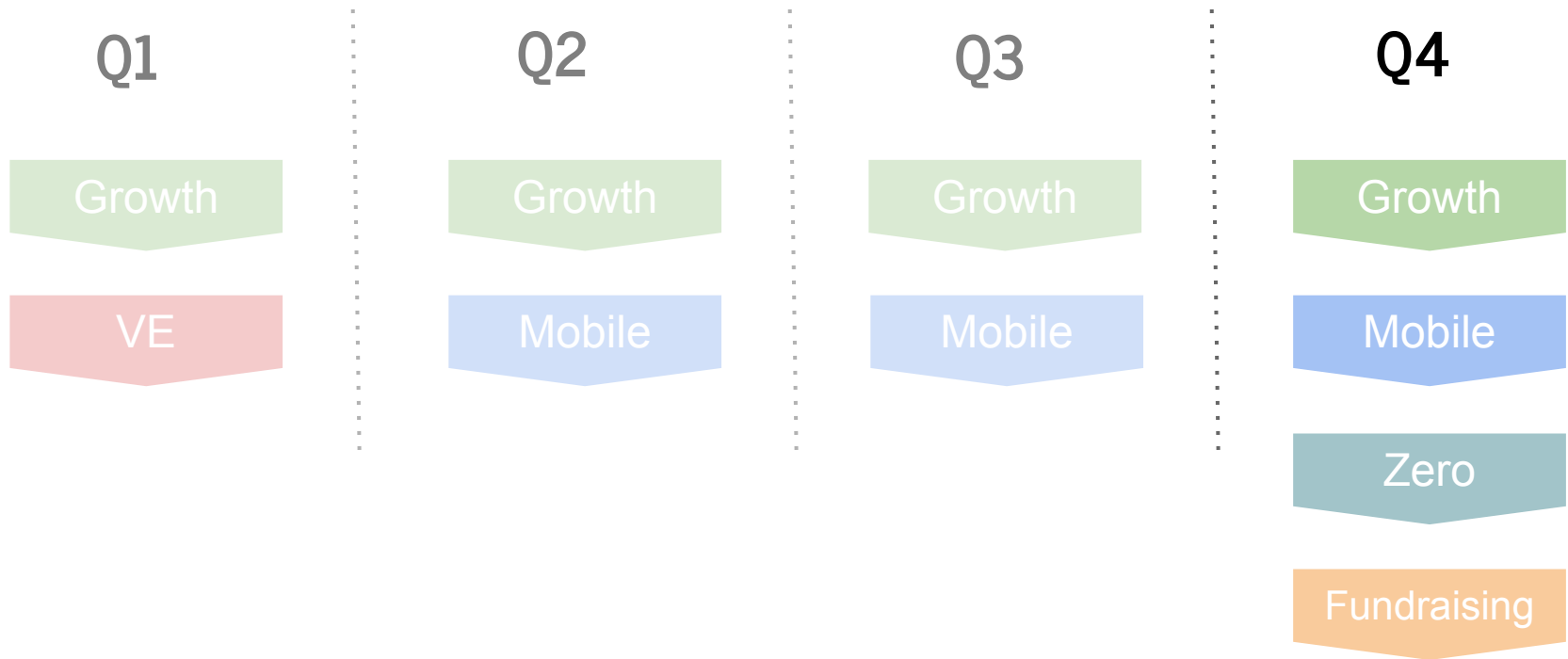
How many individual users each IP editor?

How experienced are anonymous editors?

Does encouraging anons to register increase their engagement?



Focus areas



Ad hoc data analysis requests

Custom dashboard consolidation

Ad hoc research/data analysis support for other teams

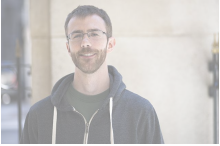
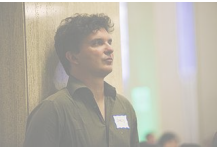
(subject to available bandwidth)

Staffing

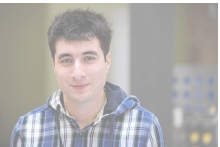
Q1



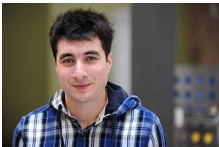
Q2



Q3



Q4



Sahar



FR req

Q4 goals

Deliver stage 2 metrics (analysis and requirements)

Topical research

**Continue to provide support to focus areas
(growth, mobile + zero)**

Hiring (FR)



Bre

Development





Team



Product Management

Kevin Leduc (San Francisco, USA)

New to team

Remote

Development

Christian Aistleitner (Linz, Austria)

Dan Andreescu (Philadelphia, USA)

Stefan Petrea (Bucharest, Romania)

Nuria Ruiz (Madrid, Spain)

Charles Salvia (New York, USA)

Both

Technical Operations

Andrew Otto (New York, USA)

Jeff Gage (50%) (San Francisco, USA)

Q3

- Metrics Standardization
- Wikipedia Zero Support
- Editor Engagement Vital Signs
 - Mobile Metrics
- Wikistats Developments
 - Kafka/Hadoop



Q3 Narrative

- **We got a lot done!**
 - Team worked on Epics prioritized after previous Quarterly Review
 - Integrated New Developers
- **Velocity on larger projects wasn't what we wanted**
 - Context Switching costs and Cognitive Load were extremely high
- **We sharpened focus and started to make more progress on fewer Epics**

Epics we worked on

- 1. Production Issues**
 - a. Monitored/fixed Wikipedia Zero, Report Card, Kafka, udp2log
 - b. Labs Migration (WO Dashboards, Wikimetrics, Limn)
- 2. Metrics Standardization**
 - a. Presented work on MediaWiki PVs at Fosdem
- 3. Accurate Pageviews for Wikipedia Zero**
 - a. Added dashboards for new carriers as needed
- 4. Editor Engagement Vital Signs**
 - a. Major work on Wikimetrics
- 5. Metrics about Mobile Usage**
 - a. Browser share report delivered to Mobile
- 6. Simplify Limn Dashboard Deployment**
 - a. Usability enhancements
- 7. Pageview API**
 - a. Purchased new server for stats.grok.se

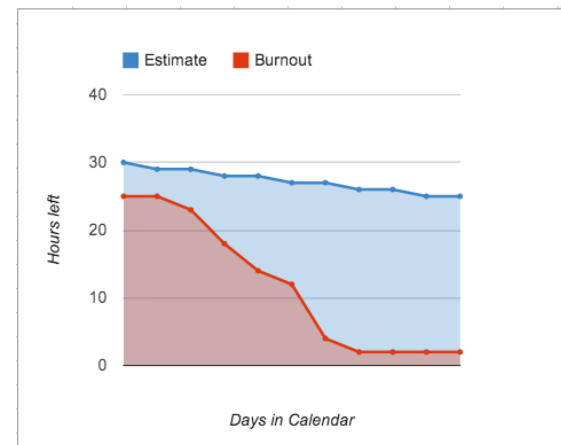
Other things we worked on

1. Page view decline investigation
2. ULSFO Latency Reports
3. User Agent Logging in Event Logging
4. Wikistats
5. Hadoop/Kafka Support
6. Privacy Policy
7. WMF Oauth Node Module



Understanding our Velocity

- Our continued work on our Agile process enabled us to understand our velocity
- We were spending less than ½ of our velocity on tasks we had committed to
- We've started to address this in Q3; more in Q4





Hadoop/Kafka Work



Summary

Tech-ops/Development collaboration on key infrastructure modernization project

Epics Supported

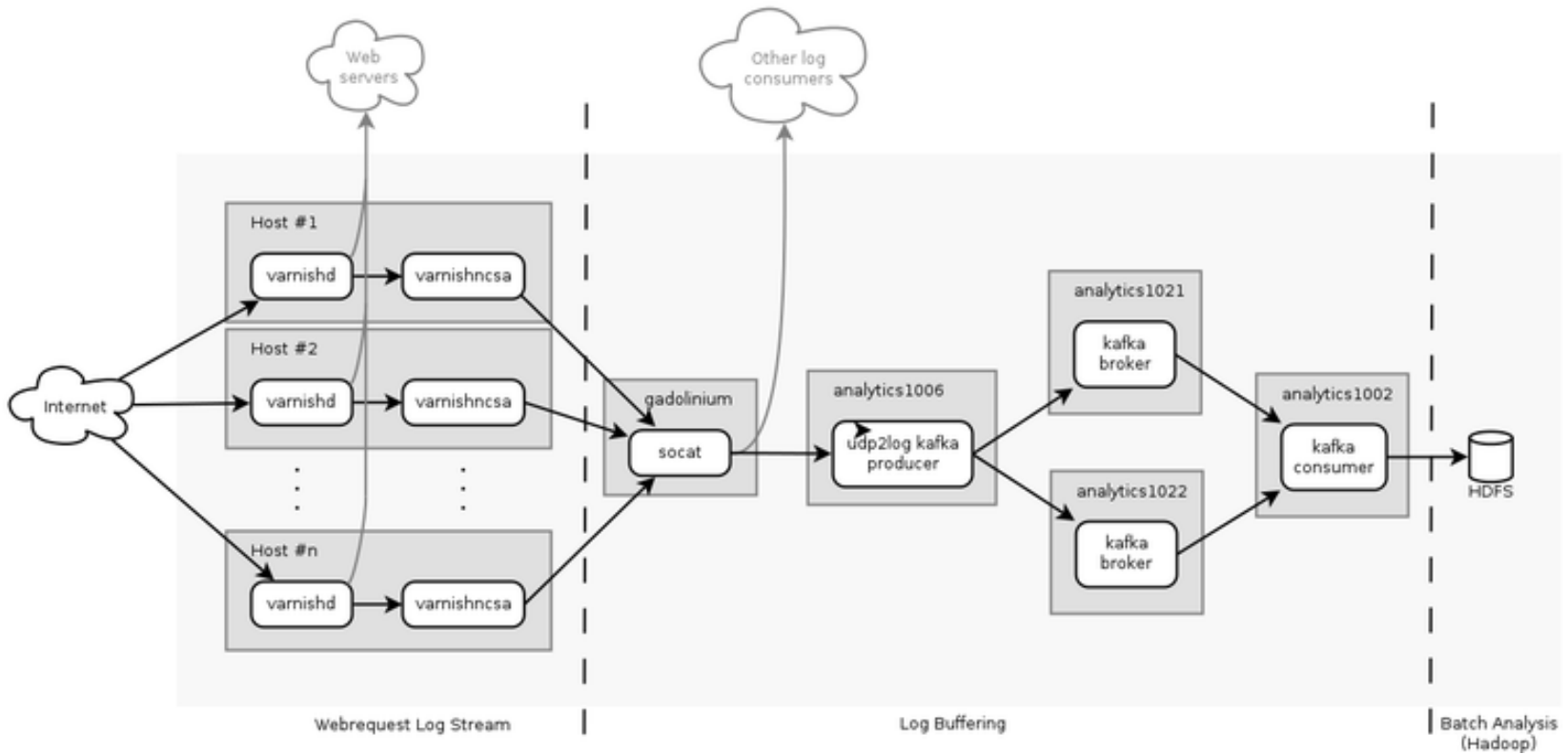
Mobile Metrics, Wikipedia Zero, Pageview API

Status

- All mobile logs delivered to Hadoop
 - Delivering value: Mobile browser and Session length reports
- Kafka currently handling mobile + bits traffic
 - 50k requests/second
 - Same order of magnitude as all of production

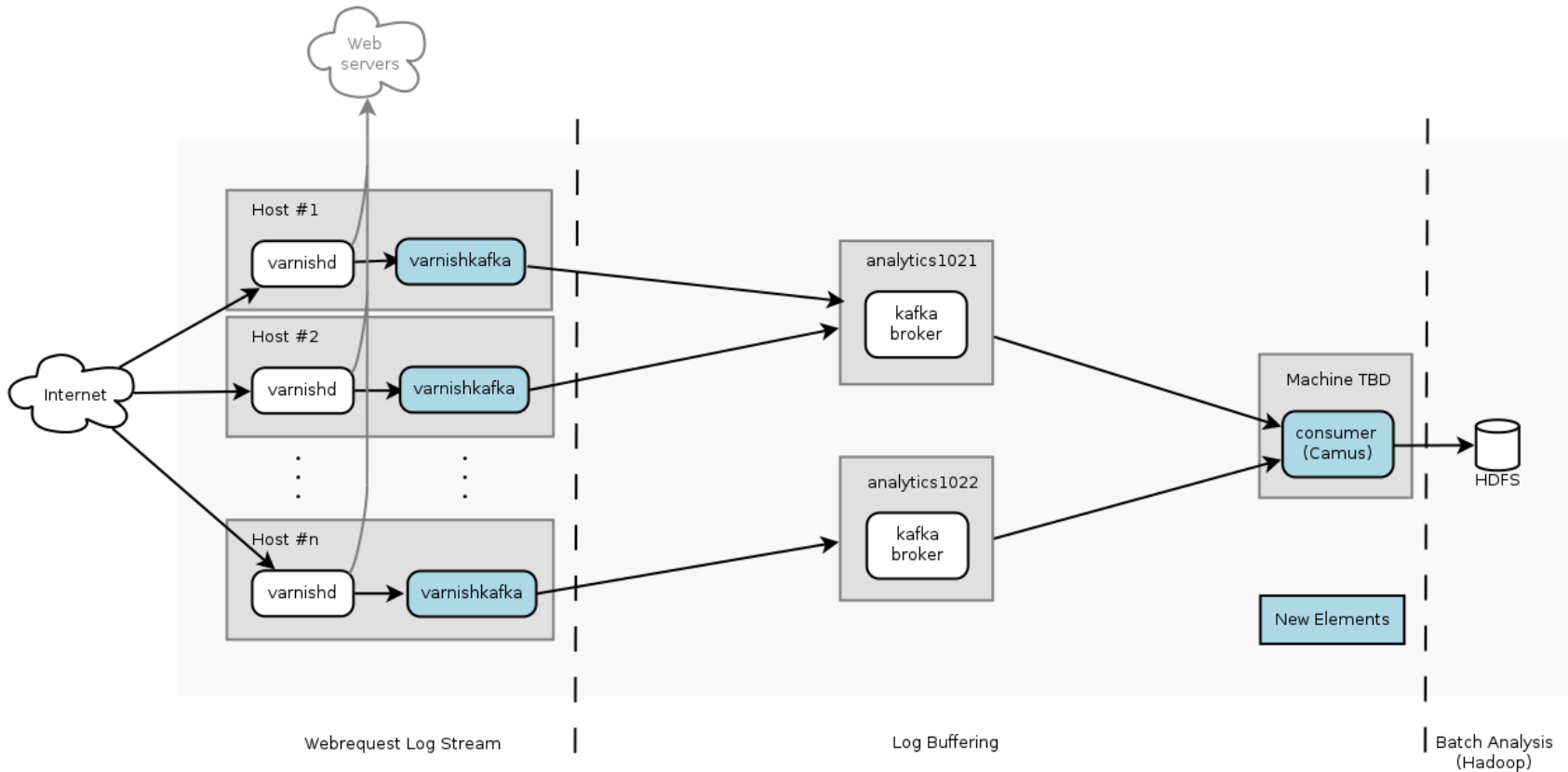


Hadoop/Kafka Original Architecture



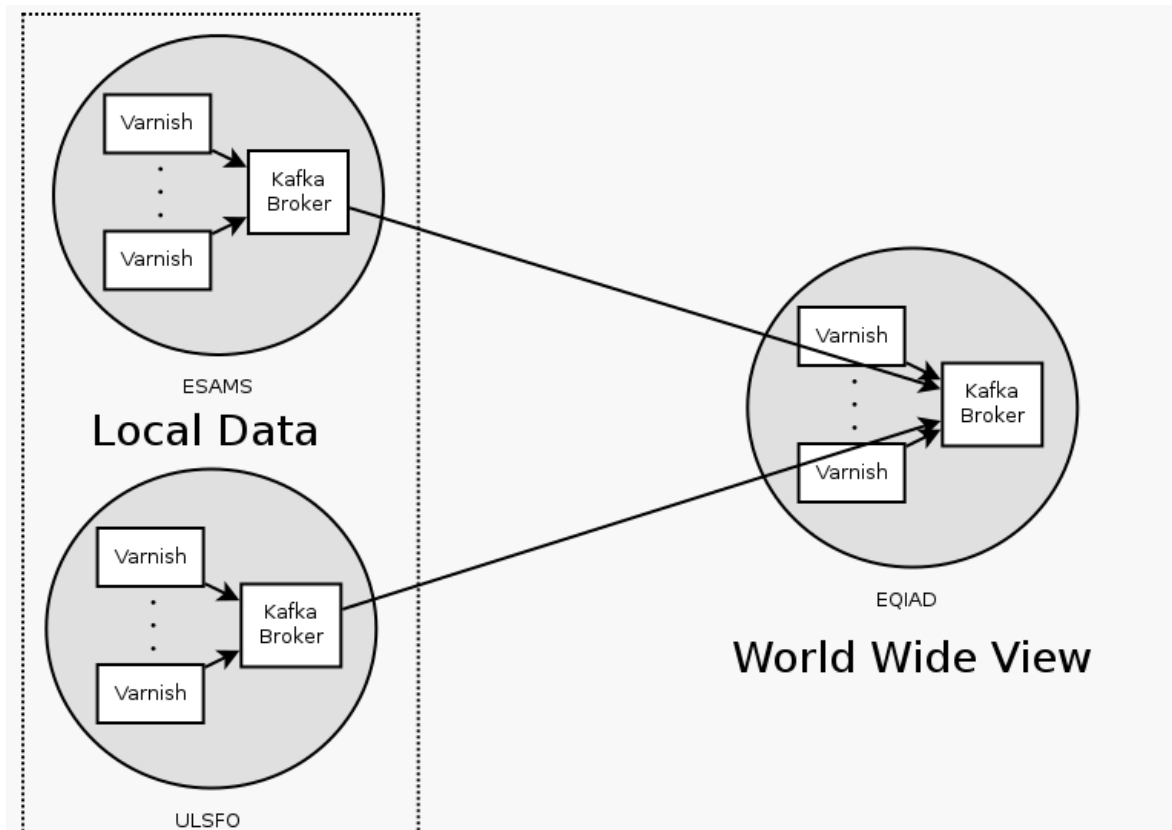


Hadoop/Kafka New Architecture





Hadoop/Kafka Global View



Note: Currently assessing if we need Kafka Brokers in Caching data centers



Hadoop/Kafka Work II



Challenges

- Finding additional Tech-ops resourcing has been difficult
 - Andrew's been doing it largely by himself
- Critical infrastructure elements have had to be built
 - Java deployment system (Archiva)
 - udp2log legacy interfaces (kafka-tee)
- Network Problems
 - Throughput issues with ESAMS are currently unsolved



Hadoop/Kafka Work III



Course Correction

- Can we parallelize infrastructure work with analysis?

Asks

- Continue to help with resourcing
- Desktop data (text varnishes?)
- Collaborate on ESAMS issues
- Capacity Planning/Hardware support



Wikimetrics



Summary

Extending interactive platform to perform scheduled queries and expose data for visualization

Epics Supported

Editor Engagement Vital Signs

Status

- Reporting updates should be finished this sprint
 - Recurrent, scheduled public reporting



Wikimetrics II



Next Steps

- Integrate Metrics specified by Research and Data team
 - Newly Registered Users
 - New Editors
 - Productive New Users
 - Surviving New Users
- Specify MVP with Stakeholders
- Select and Integrate Graphing

Q4

- **Editor Engagement Vital Signs**
 - **Mobile Metrics**
- **Wikistats Developments**
 - **Kafka/Hadoop**
- **Event Logging Support**



Q4 Goals

- To specify and deliver on high priority Epics
 - Production Issues
 - Editor Engagement Vital Signs
 - Mobile Metrics
 - Dashboard/Limn Fixes
 - Event Logging Transfer
- Implement prioritized Wikistats features
 - Search (ready to deploy)
 - Primarily wikidata/dump related reports
- To work on additional Epics as schedule permits
- Respect the process

Prioritization



New Priorities

- Our Process involves a quarterly check-in on high-level priorities
- Erik has asked that we focus on some specific goals this quarter
- These processes will rise to the top of the prioritization stack



Original Prioritization (Q3)

Priority	Epic
0	Production Issues
1	Metric Definition Standardization
2	Accurate Pageviews for Wikipedia Zero
3	Editor Engagement Vital Signs
4	Metrics about Mobile Usage
5	Simplify Limn Dashboard Deployment
6	Pageview API



Proposed Prioritization (Q4)



Priority	Epic	
0	Production Issues	
1	Editor Engagement Vital Signs	▲
2	Metrics about Mobile Usage	▲
3	Dashboard Discoverability/Annotations	NEW
4	Event Logging Transition	NEW
5	Pageview API	▲
6	Metric Definition Standardization (Dev/Page Views)	▼
7	Accurate Pageviews for Wikipedia Zero	▼
8	Simplify Limn Dashboard Deployment	▼



Unprioritized Requests



- Geo Dashboards
- Private Wikipedia Zero Dashboards

Conclusions



Challenges

- Staying Focused and Delivering on our Commitments
- Community Engagement
- Development Transparency

Questions