

The Future of Open APIs on the Web

Cathedrals in the Clouds

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@mamund





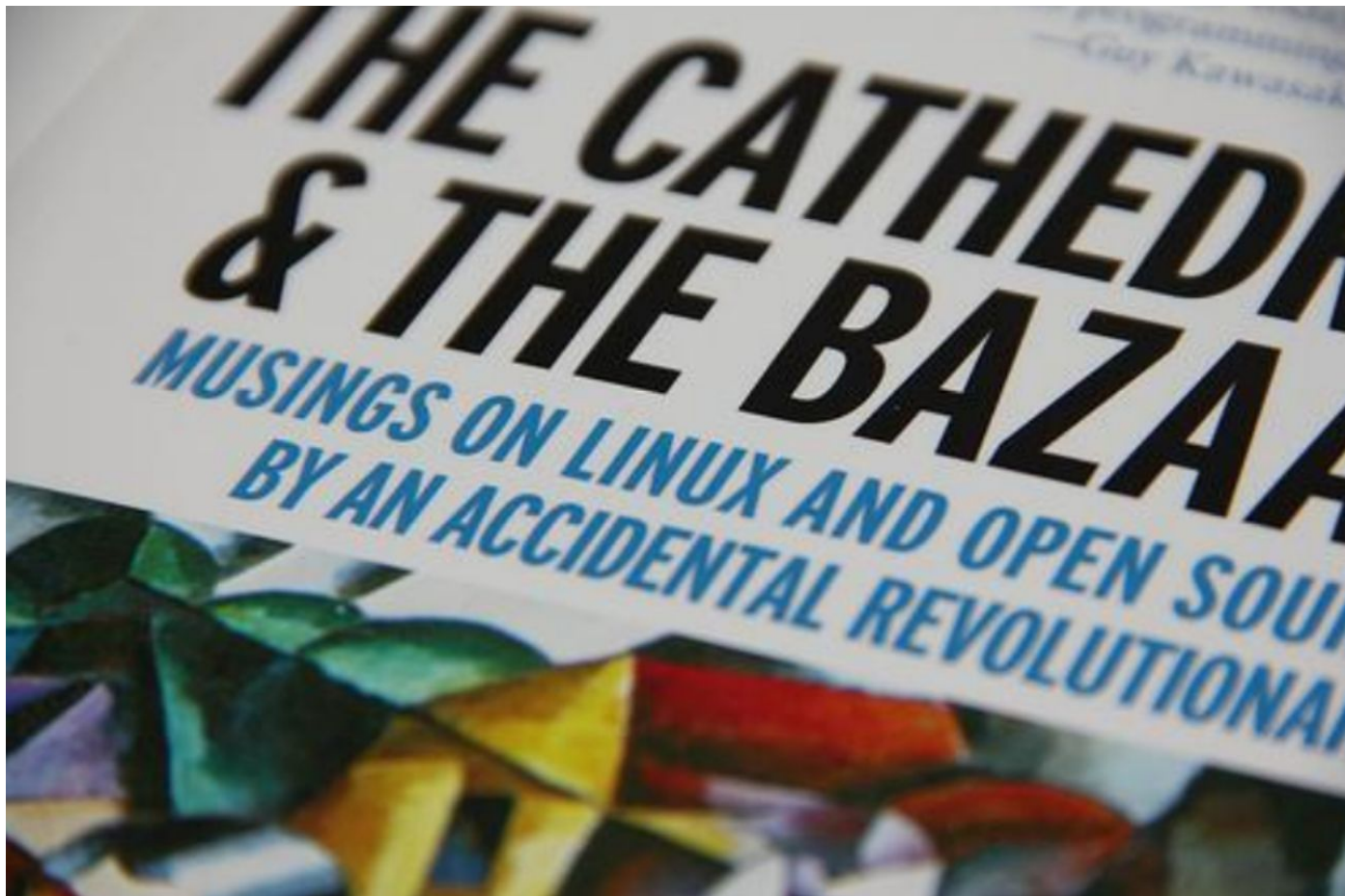
Goals for this session...

- Review the Cathedral & Bazaar
- Talk about the nature of "Open" APIs
- Review Challenges of APIs on the Web
- Start a discussion around an Open API Community



The Cathedral and the Bazaar






OPEN SOURCE
LEADERSHIP SUMMIT

Linux Kongress-Nachlese x
www.linux-kongress.org/1997/

4th International Linux Congress in Würzburg at the fortress gleanings

- ▶ [Slides, abstracts,](#)
- ▶ [opinions, comments,](#)
- ▶ [press](#)



Conference program with documents relating to the lectures

Wednesday, May 21

XFree86 Driver Development
[Dirk Hohndel](#) , [King Harald](#)



*"The most important book about technology today,
with implications that go far beyond programming."*

—Guy Kawasaki

THE CATHEDRAL & THE BAZAAR

MUSINGS ON LINUX AND OPEN SOURCE
BY AN ACCIDENTAL REVOLUTIONARY



ERIC S. RAYMOND



The Cathedral model,

***...in which source code is only available
upon each release.***



The Bazaar model,

*...in which the code is developed over
the Internet in full view of the public.*



Question:



*Are APIs on the Web following the
Cathedral or Bazaar model?*



ESR's Lessons for good open source software



Lessons for creating good open source software [\[edit\]](#)

Raymond points to 19 "lessons" learned from various software development efforts, each describing attributes associated with good practice in open source software development:^[3]

1. Every good work of software starts by scratching a developer's personal itch.
2. Good programmers know what to write. Great ones know what to rewrite (and reuse).
3. Plan to throw one [version] away; you will, anyhow. (Copied from Frederick Brooks' *The Mythical Man-Month*)
4. If you have the right attitude, interesting problems will find you.
5. When you lose interest in a program, your last duty to it is to hand it off to a competent successor.
6. Treating your users as co-developers is your least-hassle route to rapid code improvement and effective debugging.
7. [Release early](#). [Release often](#). And listen to your customers.
8. Given a large enough beta-tester and co-developer base, almost every problem will be characterized quickly and the fix obvious to someone.
9. Smart data structures and dumb code works a lot better than the other way around.
10. If you treat your beta-testers as if they're your most valuable resource, they will respond by becoming your most valuable resource.
11. The next best thing to having good ideas is recognizing good ideas from your users. Sometimes the latter is better.
12. Often, the most striking and innovative solutions come from realizing that your concept of the problem was wrong.
13. Perfection (in design) is achieved not when there is nothing more to add, but rather when there is nothing more to take away. (Attributed to [Antoine de Saint-Exupéry](#))
14. Any tool should be useful in the expected way, but a truly great tool lends itself to uses you never expected.
15. When writing gateway software of any kind, take pains to disturb the data stream as little as possible—and never throw away information unless the recipient forces you to!
16. When your language is nowhere near [Turing-complete](#), [syntactic sugar](#) can be your friend.
17. A security system is only as secure as its secret. Beware of pseudo-secrets.
18. To solve an interesting problem, start by finding a problem that is interesting to you.
19. Provided the development coordinator has a communications medium at least as good as the Internet, and knows how to lead without coercion, many heads are inevitably better than one.



Selected Lessons

- Scratch an itch
- Throw early iterations away
- Release early and often
- Many heads are better than one
- Smart messages, dumb code
- Build-in serendipitous reuse
- Plan to hand off the project



In Praise of Evolvable Systems (First appeared in the ACM's `net_worker`, 1996)

Why something as poorly designed as the Web became The Next Big Thing, and what that means for the future.

If it were April Fool's Day, the Net's only official holiday, and you wanted to design a 'Novelty Protocol' to slip by the Internet Engineering Task Force as a joke, it might look something like the Web:

- The server would use neither a persistent connection nor a store-and-forward model, thus giving it all the worst features of both telnet and e-mail.
- The server's primary method of extensibility would require spawning external processes, thus ensuring both security risks and unpredictable load.
- The server would have no built-in mechanism for gracefully apportioning resources, refusing or delaying heavy traffic, or load-balancing. It would, however, be relatively easy to crash.
- Multiple files traveling together from one server to one client would each incur the entire overhead of a new session call.
- The hypertext model would ignore all serious theoretical work on hypertext to date. In particular, all hypertext links would be one-directional, thus making it impossible to move or delete a piece of data without ensuring that some unknown number of pointers around the world would silently fail.
- The tag set would be absurdly polluted and user-extensible with no central coordination and no consistency in implementation. As a bonus, many elements would perform conflicting functions as logical and visual layout elements.

HTTP and HTML are the Whoopee Cushion and Joy Buzzer of Internet protocols, only comprehensible as elaborate practical jokes. For anyone who has tried to accomplish anything serious on the Web, it's pretty obvious that of the various implementations of a worldwide hypertext protocol, we have the worst one possible.

Except, of course, for all the others.



"Centrally designed [systems] start out strong and improve logarithmically."



Clay Shirky -- <http://www.shirky.com/writings/herecomeseverybody/evolve.html> (1996)



"Centrally designed [systems] start out strong and improve logarithmically.

Evolvable [systems] start out weak and improve exponentially."



Clay Shirky -- <http://www.shirky.com/writings/herecomeseverybody/evolve.html> (1996)



Question:



*Do APIs today adhere to ESR's
"lessons"?*

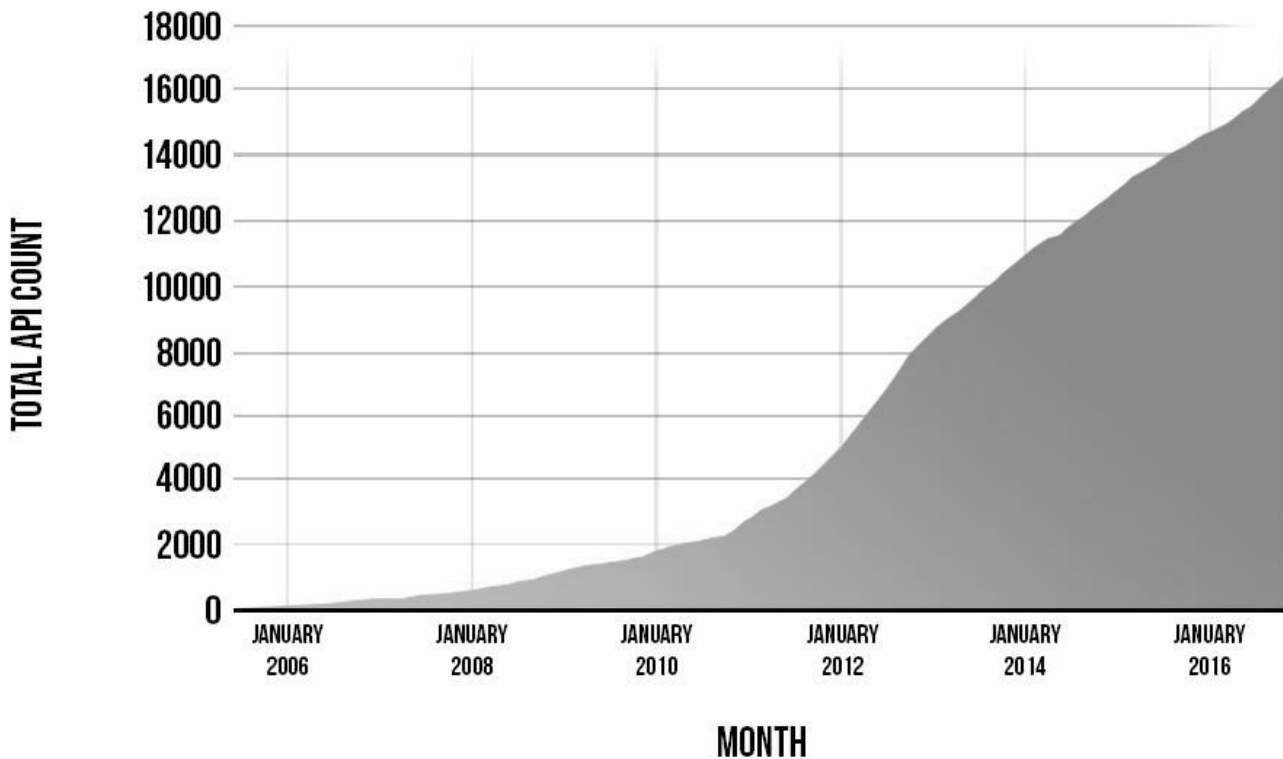
Are they evolvable?



Web APIs --> Open Web APIs



GROWTH IN WEB APIS SINCE 2005



S & P 500

▼ -1.14

2,726.98 (-0.04%)

03:59:58 PM EST



NASDAQ 100

▲ 14.18

6,927.20 (0.21%)

03:59:59 PM EST



DJIA

▼ -84.62

24,799.50 (-0.34%)

03:59:59 PM EST



NIKKEI 225

▼ -193.40

21,441.60 (-0.89%)

03:58:57 PM EST



\$200+ Billion Application Programming Interfaces (API) Markets 2017-2022: Focus on Telecoms and Internet of Things





SHARE

BUSINESS

Google pulls flight API search, putting its competition in a tight spot



Hillary Grigonis

 @HillaryGrigonis

POSTED ON
11.1.17 - 2:03PM





SHARE



Hillary Grigonis
@HillaryGrigonis

POSTED ON
11.1.17 - 2:03PM

BUSINESS

Google pulls flight API search, putting its competition in a tight spot



The Register
Biting the hand that feeds IT

ENTER SOFTWARE SECURITY DEVOPS BUSINESS PERSONAL TECH SCIENCE EMERGENT TE

Software



Twitter's motto: If at first you screwed developers over, try, try again, eh?


Post-profit social network offers to rebuild repeatedly burned bridge with app makers

By Thomas Claburn in San Francisco 6 Apr 2017 at 20:46 10 SHARE



Most re




The (????) Model,

...in which the source code is only accessible via a Web API and it is never released.



As an API consumer, how can I know...?

- Is this a healthy API?
- Is this a safe API?
- Is this an ethical API?
- What is the governance model for this API?
- Will this API abandon me/my company?



I think I need an Open API Community!



What an Open API Community can help us do...

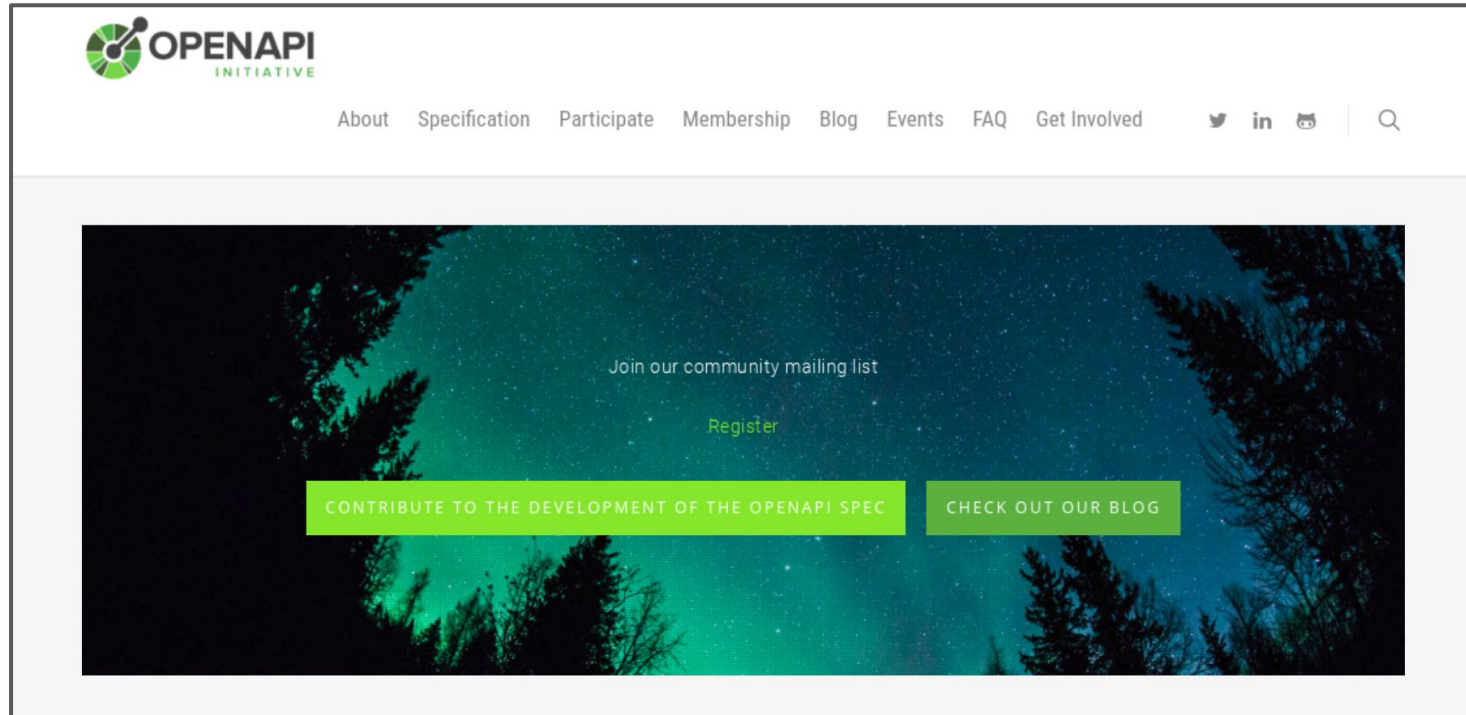
- Shepherding Standards
- Mapping the Landscape
- Supporting the Community
- Connecting Stakeholders
- Sharing Principles
- Incubating Initiatives
- Identifying/Rewarding Good API Citizens



What the community has already
created...



Shepherding Standards



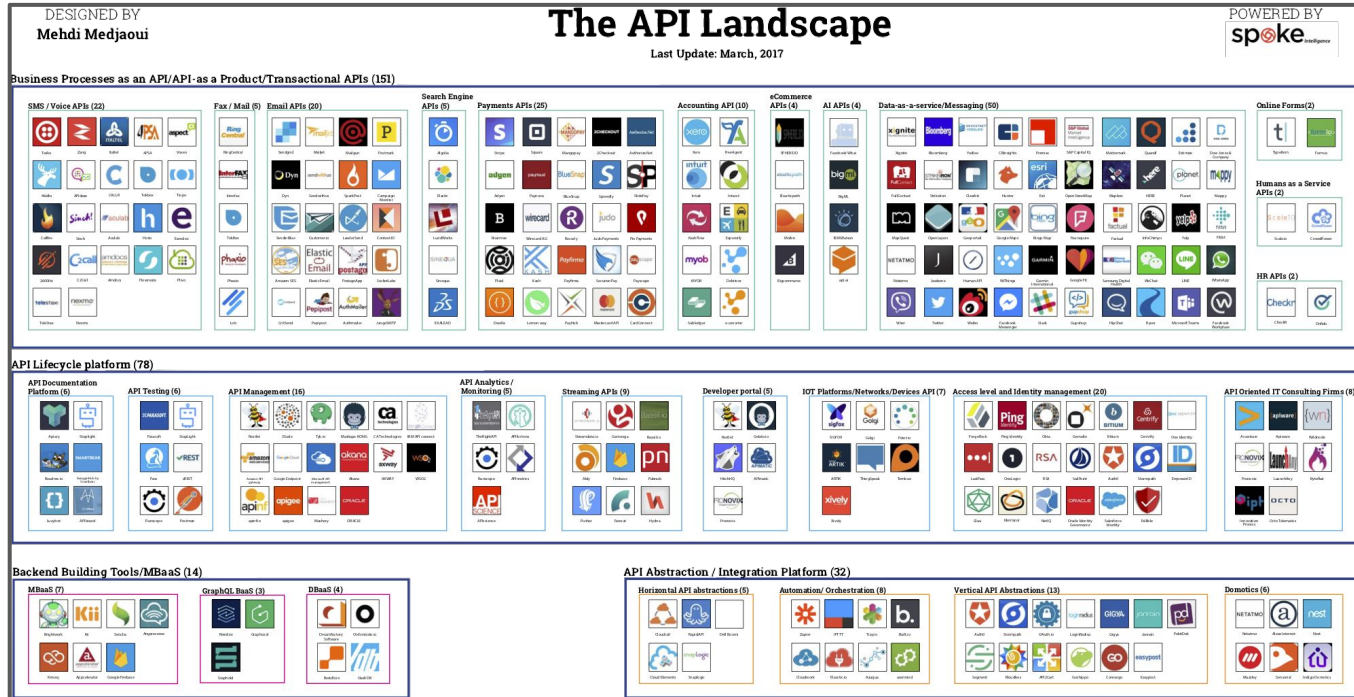
The screenshot shows the OpenAPI Initiative website. At the top left is the logo, which consists of a green circular icon with a white stylized 'O' and the text 'OPENAPI INITIATIVE' to its right. Below the logo is a horizontal navigation menu with the following items: 'About', 'Specification', 'Participate', 'Membership', 'Blog', 'Events', 'FAQ', and 'Get Involved'. To the right of the menu are social media icons for Twitter, LinkedIn, and GitHub, followed by a search icon. The main content area features a large banner image of a starry night sky with green aurora borealis and dark tree silhouettes. Centered on the banner is the text 'Join our community mailing list' with a green 'Register' link below it. At the bottom of the banner are two green buttons: 'CONTRIBUTE TO THE DEVELOPMENT OF THE OPENAPI SPEC' and 'CHECK OUT OUR BLOG'.



<https://www.openapis.org/>



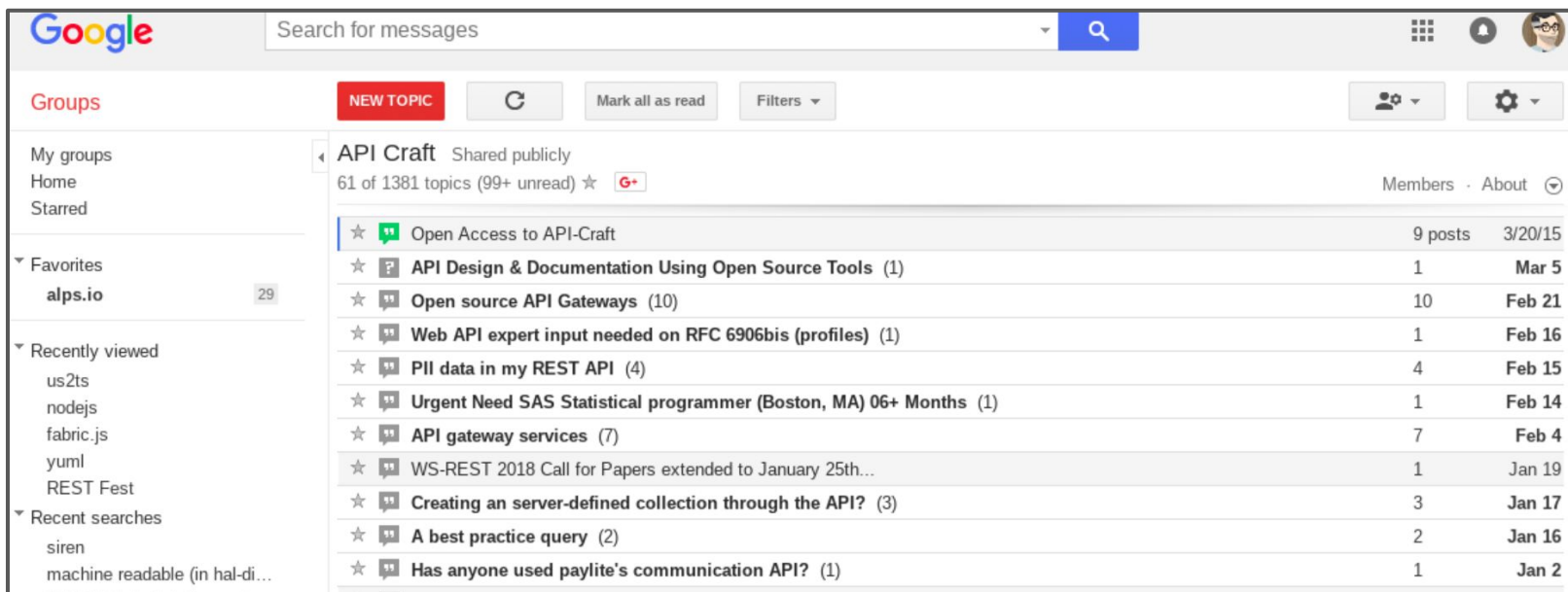
Mapping the Landscape



<http://dret.net/lectures/south-africa-2018/digital-transformation#api-landscape> Mehdi Medjaoui



Online Community



The screenshot shows a Google Groups forum page for the 'API Craft' group. The page is titled 'API Craft' and is shared publicly. It contains a list of 61 topics, with 99+ unread messages. The topics are listed in a table with columns for topic name, number of posts, and date.

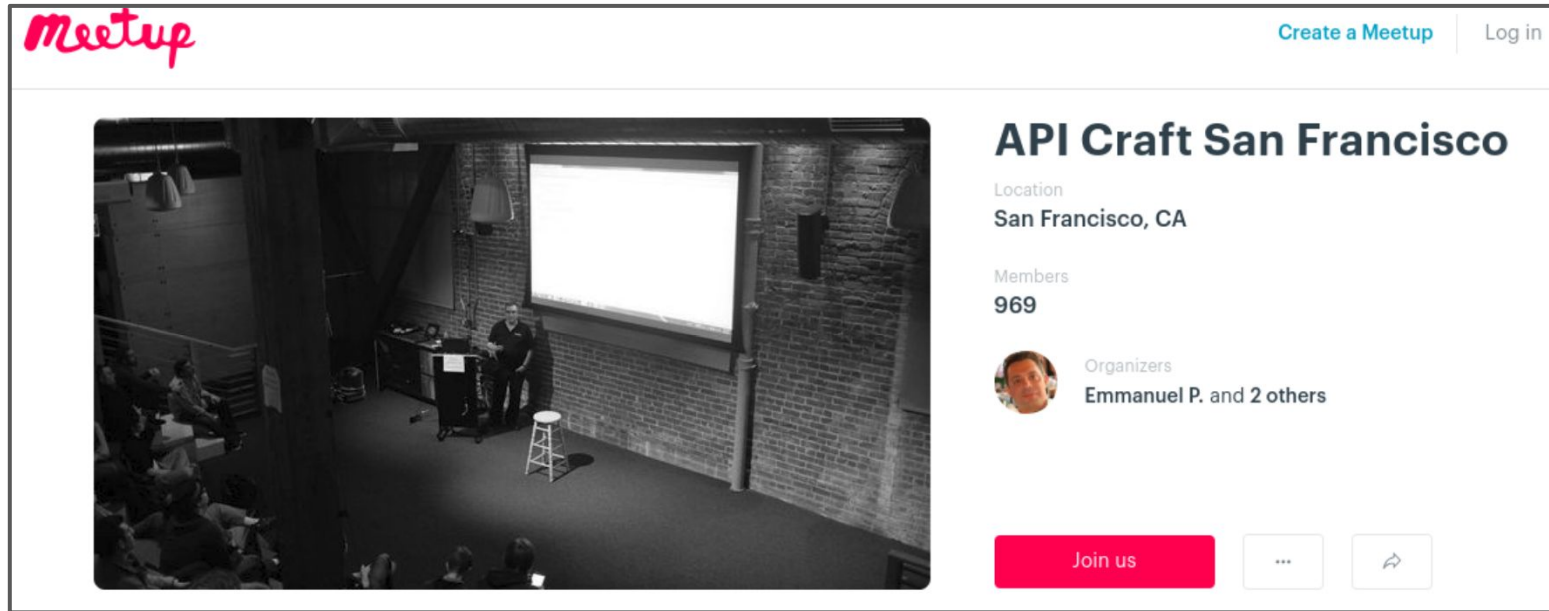
| Topic Name | Number of Posts | Date |
|--|-----------------|---------|
| Open Access to API-Craft | 9 posts | 3/20/15 |
| API Design & Documentation Using Open Source Tools (1) | 1 | Mar 5 |
| Open source API Gateways (10) | 10 | Feb 21 |
| Web API expert input needed on RFC 6906bis (profiles) (1) | 1 | Feb 16 |
| PII data in my REST API (4) | 4 | Feb 15 |
| Urgent Need SAS Statistical programmer (Boston, MA) 06+ Months (1) | 1 | Feb 14 |
| API gateway services (7) | 7 | Feb 4 |
| WS-REST 2018 Call for Papers extended to January 25th... | 1 | Jan 19 |
| Creating an server-defined collection through the API? (3) | 3 | Jan 17 |
| A best practice query (2) | 2 | Jan 16 |
| Has anyone used paylite's communication API? (1) | 1 | Jan 2 |



<https://groups.google.com/forum/#!forum/api-craft>



Local Meetups Worldwide



The screenshot shows the Meetup website interface. At the top left is the Meetup logo in red script. At the top right are links for "Create a Meetup" and "Log in". The main content area features a large black and white photograph of a person presenting at a stage with a large screen. To the right of the photo, the title "API Craft San Francisco" is displayed in a bold, dark font. Below the title, the location "San Francisco, CA" is listed. Further down, the number of members "969" is shown. Below the member count, there is a profile picture of the organizer, Emmanuel P., with the text "Organizers Emmanuel P. and 2 others". At the bottom of the page, there are three buttons: a prominent red "Join us" button, a grey button with three dots, and a grey button with a share icon.

meetup Create a Meetup Log in

API Craft San Francisco

Location
San Francisco, CA

Members
969

Organizers
Emmanuel P. and 2 others

[Join us](#) ... Share



<https://www.meetup.com/API-Craft-San-Francisco/>



International Conferences



The screenshot shows the Linux Foundation Events page for the API Strategy & Practice conference. The header includes the Linux Foundation logo, navigation links for 'EVENTS // VIEW EVENTS', and 'LFSITES'. A secondary navigation bar contains 'Home', 'Program', 'Attend', 'Sponsors', 'Features and Add-Ons', and 'CFP Dashboard'. The main banner features a cityscape background with the text 'API STRATEGY & PRACTICE' and a logo of a network of nodes. Below the banner, a blue bar displays the dates 'October 31 - November 2, 2017', the location 'Hilton Portland, Portland, Oregon', the hashtag '#apistrat', and social media icons for Twitter, Facebook, LinkedIn, and Google+.



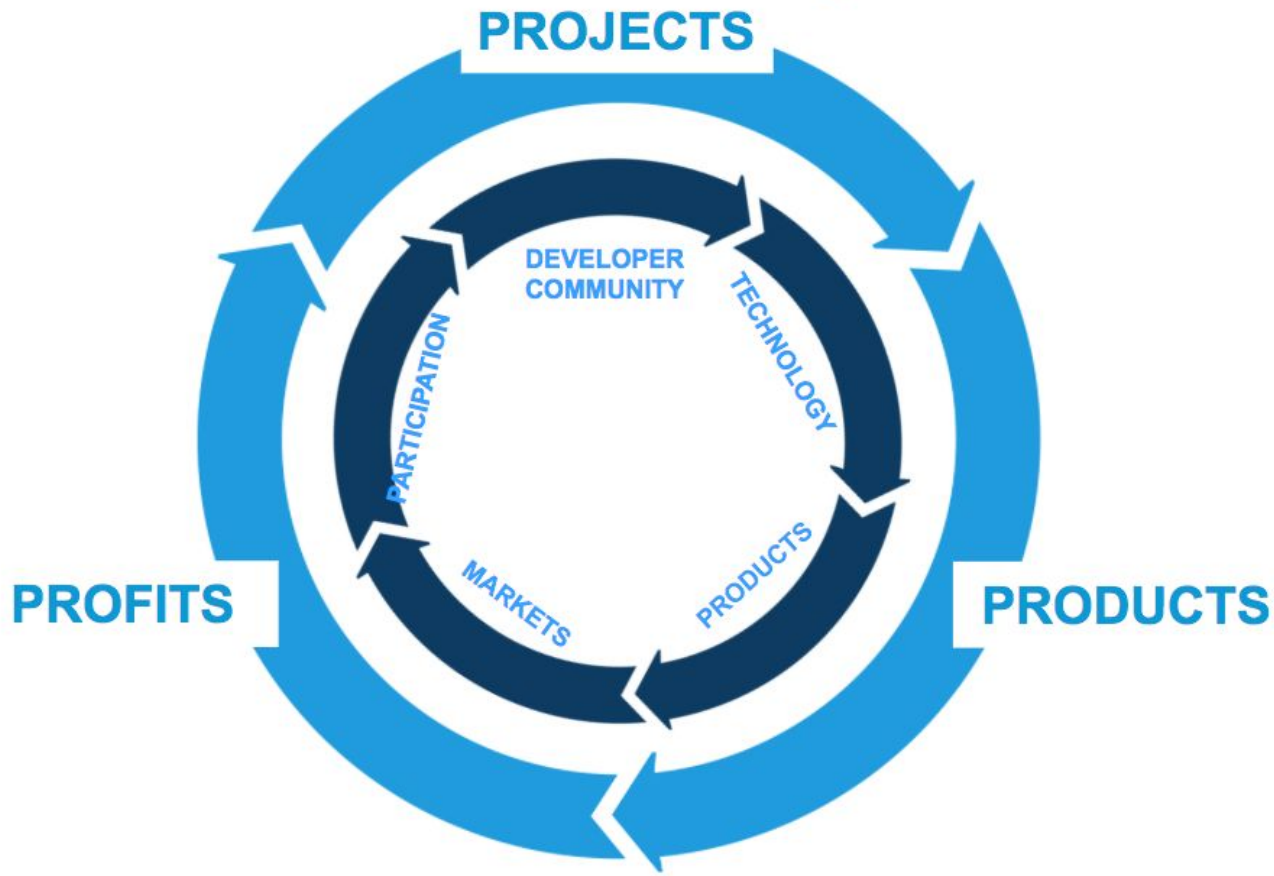
<http://events17.linuxfoundation.org/events/apistrat>



However...

- Connecting Stakeholders?
- Sharing Principles?
- Incubating Initiatives?
- Identifying/Rewarding Good API Citizens?





<https://www.linuxfoundation.org/blog/new-initiatives-to-create-sustainable-open-source-projects-at-the-linux-foundation/>



Question:



Do we need an Open API Community?



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