Practitioner Board

**ANNUAL REPORT**

October 2016

Submitted by Terry Coatta, Stephen Ibaraki [co-chairs 2016-2018]

**Summary**

The Practitioner Board has been operating since June 2005. The board itself meets via teleconference as needed and we have 2-3 face-to-face meetings a year. The board is actively engaged on the projects that we have undertaken and we have good staff support.

At the EC/Council meetings Neville-Neil and Terry Coatta presented several programs for broadening Practitioner content and engagement.  Council and EC was updated and endorsed an ongoing multi-pronged approach including growing Queue as an e-magazine, continuing updates to the Queue web site, growing the Practitioners' Conference, the journal - Research in Practice.  Budget was allocated for these efforts at the Council meeting. All of these efforts are guided by the Practitioner Board.

**2015/2016 Board Membership**

Committee Chairs

Chair [George Neville-Neil](http://util.acm.org/key_people/directories/listing.cfm?id=4209102&tid=81&pid=1221)

Member [Samy Al Bahra](http://learning.acm.org/about/professions_board.cfm?id=8107791&tid=81&pid=1173)

Eve Andersson

[Steve Bourne](http://learning.acm.org/about/professions_board.cfm?id=8107791&tid=81&pid=1173)

[Karin K. Breitman](http://learning.acm.org/about/professions_board.cfm?id=4100434&tid=81&pid=1173)

[Alain Chesnais](http://util.acm.org/key_people/directories/listing.cfm?id=4733929&tid=81&pid=1173)

[Terry J. Coatta](http://util.acm.org/key_people/directories/listing.cfm?id=2941722&tid=81&pid=1173)

[Benjamin Fried](http://util.acm.org/key_people/directories/listing.cfm?id=7677370&tid=81&pid=1173)

[Stephen Ibaraki](http://util.acm.org/key_people/directories/listing.cfm?id=5139861&tid=81&pid=1173)

Theo Schlossnagle

ACM HQ Staff Member [James Maurer](http://util.acm.org/key_people/directories/listing.cfm?id=8897258&tid=81&pid=1220)

ACM HQ Staff Member Wayne Graves

Steve Ibaraki (PDC)

Samy Al Bahra, Terry Coatta (Applicative)

**Practitioner Board representation**

1. Queue Board (Bourne, Maurer, Neville-Neil)
2. Queue Project: Case Studies (Coatta, Compton)
3. Project: Applicative (Al Bahra, Coatta)
4. Project: Professional Development (Ibaraki, Timanovsky)

**1. Queue Web Presence**

Queue continues to grow its readership, with more than 1.5 million page views in the past 12 months. This is a 20% increase compared to the previous year.

Since 2015 Since 2010

Pages viewed +20.5% +59.5%

Number of readers +3.3% +63.3%

Sessions +1.6% +55.9%

Pages/session +18.6% +2.3%

Other than Google search, social media sites are the most important source of readers

20% Google search

11% Googe AdWords

10% Hacker News

5% Twitter

2% reddit

1% Facebook

1% slashdot

Hacker News is the biggest source of visits to Queue other than Google search and clicks on Google text ads. Facebook has never been one of the biggest sources of visits, but is the one growing the most, with 80% more visits from Facebook last year than the previous year.

Visits to Queue from the U.S. remains steady at about 35% of all traffic, while traffic from India and China is increasing by about 2% each year. Traffic from Europe and Latin America is steady but we’re seeing more growth in Asia, specifically Vietnam, Pakistan, and Indonesia.

We have been seeing an increase in mobile access of content every year and the rate of increase is growing. Mobile access to the Queue site is 26% higher than last year, with 27% of visits to Queue now via phones or tablets.

To address this, in late 2015 Queue launched apps for iOS, Android, and a browser-based version.

The acmqueue app has been live for about 11 months and has attracted around 4,000 users, with about 2,000 of those active each month. Although the numbers are modest, since launch, the acmqueue app has had more use than any other ACM app, has earned more in sales than any other ACM app, and has been installed more than any ACM app other than the DL app.

**2. Queue Case Studies**

**The Case Study Steering Committee currently consists of:**

• Terry Coatta (Committee Chair & CTO at Marine Learning Systems)

• Mark Compton (Coordinator)

• Chris McCubbin (Director of Data Science at Sqrrl)

• Becky Bace (Chief Strategist at Center for Forensics, Information Technology, and Security)

• Lucas Panjer (Senior Director of Engineering at Tasktop)

• Ken Britton (Engineering Director at HootSuite)

• Shon Vick (Head of Health IT at ESAC)

• Harry Saal (Chairman of Retrotope)

**Summary**

Over the past year, the case study group has published 2 case studies and 3 companion articles. We have one case study which will be ready for publication shortly, and have started work on one new case study.

**Published Case Studies**

Over the past year, two case studies have been delivered for publication, with yet another well along in the development process. Also, the case study effort managed to develop three additional articles for publication, with at least three more currently underway. The first of the case studies to appear over the past year explored Google’s decision to go with a Software-Designed-Networking approach for the private-backbone WAN connecting all its data centers worldwide, the challenges encountered in the course of implementing that design, and the results observed as a consequence. Amin Vahdat (Google’s Chief WAN Architect), David Clark (MIT), and Jennifer Rexford (Princeton) were featured in that discussion.

The current issue of Queue features the second case study, focused on what it is that precipitated the design decisions key to the creation of Facebook’s celebrated React framework. Pete Hunt (the engineering manager at Instagram who was the first person to use React for a production deployment), Paul O’Shannessy (who coordinates React development at Facebook), Dave Smith (Engineering Director at HireVue), and Terry Coatta (CTO at Marine Learning Systems).

**Published Companion Articles**

Finally, the three case study companion articles that were published over the past year included “Testing a Distributed System,” by Philip Maddox, a systems engineer at Circonus; “Debugging Distributed Systems,” by Ivan Beschastnikh and Patty Wang (both from the University of British Columbia), Yuriv Brun (University of Massachusetts, Amherst), and Michael D. Ernst (University of Washington); along with “Functional at Scale,” by Marius Eriksen (a Principal Engineer in Twitter’s Systems Infrastructure Group).

Ongoing and Future Work

The case story we currently have under development focuses on HootSuite’s migration away from the LAMP stack to take more of a microservices approach to customer interaction. It’s a shift that has involved changes in the underlying platform, tools, architecture, and programming language the popular social media platform uses. Among those participating in the discussion at the heart of this story are Edward Steel, Yanik Berube, and Ken Britton from HootSuite, along with Jonas Bonér from Typesafe and Terry Coatta.

Next in our queue is a case study that discusses an effort at Google that didn’t go exactly as planned. It concerns an application that’s truly pedestrian. But what makes the story interesting is that, midway through the project, the development team concluded it had probably chosen the wrong framework for the job. How they decided to proceed from there is the matter we’ll want to focus upon. And we also hope to accompany this piece with an article or two related to other trends in Web development.

**3. Applicative**

ACM hosted its second conference by and for practitioners, [Applicative](http://applicative.acm.org/speakers.html), in June of 2016. Applicative had two tracks, Applications and Systems. Including both tracks we had twenty two talks. All of the talks were recorded on video and many of the speakers have turned their talks into articles for Queue. Applicative had 257 attendees, which exceeded 200 for the conference in 2015 with an investment made into conference growth and development for this year. The response to the conference was overwhelmingly positive both in personal comments to the organizers and in the responses to a survey put out after the conference. Practitioner Board members Terry Coatta and Samy Al Bahra organized and ran the conference with significant help from folks at HQ, including Pat Ryan and Donna Cappo.

Working from the positive feedback from Applicative 2016, we are now planning the next conference targeted to be held in Q4 2017 or Q1 2018. The idea for this conference came up during the post-conference analysis for Applicative this year. The idea is to build a conference around the materials being published under the “Research for Practice” banner in Queue (see <http://queue.acm.org/detail.cfm?id=2967618>). This conference is perfectly aligned with the goals to leverage existing ACM connections in the research community and help bridge them to practitioners.

**4. Professional Development Committee (PDC)**

**Professional Development Committee (PDC) 2015/2016**

Stephen Ibaraki (Chair)

Eve Andersson,

David A. Black (term ending 6/30/16)

Don Gotterbarn

Dominic Holt

Bradley Jensen

Terence W. Linkletter (term ending 6/30/16)

Srikantan Moorthy

Dave O’Leary

Will Tracz

Yan Timanovsky (ACM HQ)

**PDC members on Practitioner Board**:

Eve Andersson appointed February 2016

Stephen Ibaraki as chair PDC

**Webinar Subcommittee (PDC-W)**:

Will Tracz (chair), Stephen Ibaraki, Terry Linkletter, Tan Moorthy, Yan Timanovsky (ACM HQ)

**Professionalism and Certification Subcommittee (PDC-PCC)**:

The PCC is charged with scanning the computing professionalism, licensing, and certification landscape for important new developments so ACM is prepared to act if necessary. Three members are also in the ICCP where the ACM is a founding member. It consists of:

Terry Linkletter (chair, ICCP ACM contributor), Don Gotterbarn (ICCP board ACM rep), Stephen Ibaraki, Bradley Jensen (ICCP board ACM rep), Srikantan Moorthy, Yan Timanovsky (ACM HQ).

**Projects:**

1. **ACM Learning Webinars**

The successful webinar series continues to be the most exciting program from ACM Learning. Recent speakers include ACM award winners, Queue contributors, and young entrepreneurs. More technical, practical, and “over the shoulder” events are in the works in FY 2017. We are also making a concerted effort to include participants from various gender, racial, geographic, and age groups.

Monthly ACM Learning Center bulletins profiling ACM value, products, and services reach more than 100,000 professionals, Webinar bulletins reach over 400,000 professionals, and through ACM PDC member social media and media channels over 10 million potential audience reach. In FY 2016, ACM Award winners giving talks included 2014 ACM Eugene Lawler Award recipient Robin Murphy (Disaster Recovery/Robotics), Matei Zaharia (ACM Dissertation Award winner; co-inventor of Apache Spark and co-founder of Databricks), and SIGKDD Innovation Award winner Pedro Domingos. Other highlights included repeat performances by ACM Fellow and Software System Award recipient Bertrand Meyer, another from Steve McConnell (award winning author of books such as *Code Complete*) and ACM/IBM/IEEE Fellow Grady Booch. Booch and Domingos’ talks were “mega events” with particularly high registration and attendance.

ACM Practitioner Board and Queue contributors George Neville Neil and Tom Limoncelli, gave practical talks, while more “experimental” events with Dominic Holt (entrepreneurship and innovation colonies) and David Weiss (an April Fool’s webcast around agile software practices). Paul Li gave a popular and highly rated talk on what it takes to make a successful Software Engineer. Barry Devlin, one of the founders of “data warehousing,” a third-time participant, talked about the implications of BI and BIG Data. Adrian Cockroft, former cloud architect at Neflix, delivered a very highly rated talk on Microservices.

Examples are given in the table below:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Title** | **Registered** | **Attended** | **Total Attendance** | **Att: Live** | **Live Attendance** | **Att: OD** | **Satisfaction** | **% Practitioner** |
| What Time Is It? A Guide to Time for Software Developers (George Neville-Neil) | 1953 | 856 | 43.83% | 481 | 24.63% | 402 | 94.40% | 78.2% |
| Design by Contract: A Guiding Principle for Quality Software (Bertrand Meyer) | 3338 | 1604 | 48.05% | 889 | 26.63% | 822 | 94.40% | 70.8% |
| What Makes a Great Software Engineer? (Paul Li) | 3411 | 1590 | 46.61% | 834 | 24.45% | 858 | 94.70% | 66.7% |
| The Five Tribes of Machine Learning (Pedro Domingos) | **4991** | 2656 | **53.22%** | **1536** | 30.78% | 1362 | 95.80% | 63.4% |
| Making Big Data Processing Simple with Spark (Matei Zaharia) | **4081** | 1968 | 48.22% | **1087** | 26.64% | 1015 | **99.20%** | 70.9% |
| Computational Thinking (Grady Booch) | **4848** | 2296 | 47.36% | **1367** | 28.20% | 1140 | 93.40% | 69.9% |
| Fail Better: Radical Ideas from the Practice of Cloud Computing (Tom Limoncelli) | 1902 | 852 | 44.79% | 498 | 26.18% | 415 | **98.40%** | **85.3%** |
| A Pragmatic Introduction to Multicore Synchronization (Samy Al Bahra) | 1818 | 874 | 48.07% | 509 | 28.00% | 433 | 90.50% | 66.4% |
| The Evolution of Microservices (Adrian Cockroft) | 2982 | 1457 | 48.86% | 836 | 28.03% | 788 | **99.4%** | **85.60%** |

**Other notes** on Webinar Program: Based on post-event surveys, practitioner attendance has consistently been very high (over the past year, in the 65-85% range). Awareness and repeat attendance has also been very high (among the most recent events, 73-84% of attendees report having attended other ACM webinars). In FY2017, we are starting to include additional registration fields (country, gender, age range) in order to align data collection with other ACM products and services. It remains to be seen if there will be an impact on the webinar program.

1. **Books and Videos**

**Safari Books Usage** (based on #unique users)

* FY 2015: 12,788; Q1-2 7,990; Q2: 4815
* FY 2016: 11,061; Q1-2 7,290; Q2: 4474; Q1: 4567
* Down 13.5% from FY 2016, Q1-2 down 8.8% from FY 2016, Q2 down 7.1% from 2016.

Analysis and Notes:

* Recommendations to increase usage:
  + Increasing standalone communications about Safari collection (in addition to monthly bulletins).
  + Going from 2 to 3 book swaps annually.
* Review by PDC members deemed content to be of a very high quality.
* Safari contract up for renewal in spring 2017.

**Skillsoft Usage** (based on engagements and #unique users; includes books, courses, videos)

* FY 2016: 60,793 engagements (including ITPro upgrade subscribers), 60,049 (not including ITPro); 8,850 users (including ITPro).
* FY 2015: 61,674 engagements (including ITPro upgrade subscrubers); 60,654 (not including ITPro); 10,017 users

Analysis and Notes:

* New registrations up significantly in recent weeks with increased promotions.
* Recommendation to schedule more “standalone” bulletins promoting newly added assets (books, courses, videos are added dynamically).
* In FY2016, we were able to maintain the lower-priced deal previously negotiated with Skillsoft, while significantly increasing content (courses 500 >> 1,400+, books 500 >> 3,000+). Focus: software development, networking, databases and data management, cybersecurity, project management.

Plans:

* Monitor topic areas more closely (may need to bring in more content in Operating Systems and/or Cloud Computing/Virtualization.
* Consider survey to non-users and people who clicked once but never returned (including past members) to double as an awareness campaign.

**Elsevier (Notes)**

* Usage has been steady.
* Due to duplication of Morgan Kaufmann and Syngress titles now available through the Skillsoft collection, ACM may choose to discontinue the Elsevier program after calendar year 2016.

**Other Notes on Learning Center Books/Courses/Videos**

* Marketing has increased, both in Learning Center bulletins and through Social Media (particularly Twitter).
* Based on recent review by PDC members, the books were deemed to be current and of high quality. The videos and courses received mixed reviews (there’s an opinion that the courses lack depth and cannot compete with Coursera, for instance).
* 30-day free Skillsoft trial demos being planned (hoping to enable in fall 2016): this may drive non-members to Learning Center. Take-up of demos and member conversions will be monitored.
* Lots of content, but something of a “hodge-podge” so confusing; despite increased marketing, awareness and targeting remain a challenge. A review of PDC members indicated improved organization and search capability required providing related content recommendations.
  + Some tweaks to Learning Center already done, more improvement to navigation are in the works.
* Already exposing assets thru ACM.org, Learning Center, monthly bulletins, social media, and integrating into webinars as well as post-webinar prospect mailings.
* Other ways of raising awareness and usage? May try increasing frequency of dedicated bulletins specific to vendor/program (e.g., new books dynamically added to Skillsoft).

1. **Podcasts**

Over 120 podcasts/interviews/articles w/industry leaders (done by Stephen Ibaraki with no labor or financial impact to the ACM—funded by Stephen). Up to 50 added per year to the ACM Learning Center.

The interviews are also now part of this project: Computing Educators Oral History Project <http://www.southwestern.edu/departments/mathcompsci/OHProject/other-ohprojects.html> and can appear with the ACM Turing pages.

The interviews in the ACM Learning Center are referenced at United Nations events, UN ITU events, Digital Africa Conferences, Global E-Government Forums, World CIO/CTO Forums, World Computer Congress, Financial Services Roundtable (top 100 CEOs with 91.7 Trillion USD in managed assets, 1.2 Trillion in annual revenue, 2.3 million employees). At ICSE 2016 both the interviews and ACM Learning Center were spotlighted.

Each month ACM interviews linking to the ACM Learning Center appear as blog articles in IDG-IT World (Canada) with top ten monthly rankings in readership and two placing in the top five for the year 2015 for IT World (7 times winner of the Gold medal for online publishing). IDG (all brands) global audience is ~200 million, ~100 countries. This program began in the last half of 2015 is continuing in 2016-2018 -- podcasts appearing in the ACM Learning Center will also appear in IT World. For January 2016, the ACM interviews with two entrepreneurs (who took the top Mobile platform prize at CES) made the top 10 for the month though released in the last week of January and will place in the top for 2016. For February 2016, the ACM interview with Thomas A. Limoncelli <http://bit.ly/1V8yICr> has links to the ACM Learning Center, ACM and ACM Queue plus Tom talks about the value of the ACM and of ACM Queue so five spotlights on the ACM. Three more added in February and March (Mike Hinchey 2016 President IFIP in March). Peter Norvig Director of Research Google and Anand Sanwal, founder and CEO CBInsights appeared in April/May. Google’s Senior Fellow Jeff Dean appeared prior to the Mega Webinar in July showcasing the ACM Webinar and the ACM. We are trending to make the top 5 for 2016.

Note: This IDG program started in earnest after the interview with ACM PB Chair George Neville Neil got good traction last year and George provided feedback to get more links to the ACM into the interviews. This was difficult initially since large media is hesitant about including these kinds of links however with two of the top five ranking for 2015, they have provided more freedom as evidenced by the Limoncelli interview.

**Other Projects, Updates, Plans for FY2017**

* As part of ACM’s commitment to “Computing for a Social Good,” partnership between ACM and Social Coder went into effect in spring 2016.
  + So far, several dozen SocialCoder volunteers have signed up for complimentary ACM memberships providing access to the Learning Center. A steady trickle continues on a weekly basis.
  + A smaller number of ACM members have volunteered for SocialCoder. We are tracking them for potential success stories in the future.
  + This was a PDC project spearheaded by Dave O’Leary with assistance from Dominic Holt and Don Gotterbarn.
* ACM agreed to partner again with Appreneur (a contest bringing student app developers to the CES and providing applicants with ACM membership) in 2017. Approximately 30 Appreneur applicants applied for ACM memberships in 2016. The KF Foundation which sponsors Appreneur also provided Platinum funding for Applicative 2016. Moreover InfoSys encouraged their engineers to participate in Applicative 2016 as InfoSys executive VP, Tan Moorthy, sits on the PDC.
* CompTIA partnership providing members with discount on training continues to have good uptake.
* Further partnerships may be considered, especially with the launch of the ACM PB-Marketing Committee and those members’ networks.
* Extend ACM eLearning awareness/usage through browser extensions – expose search engine results with content from ACM services.
  + Yan started conversation with Skillsoft, will approach Safari as well.
  + Yan to work with Eve, ACM IS, and eLearning vendors. Targeting Q3-Q4.