

2016/2017
Annual Report



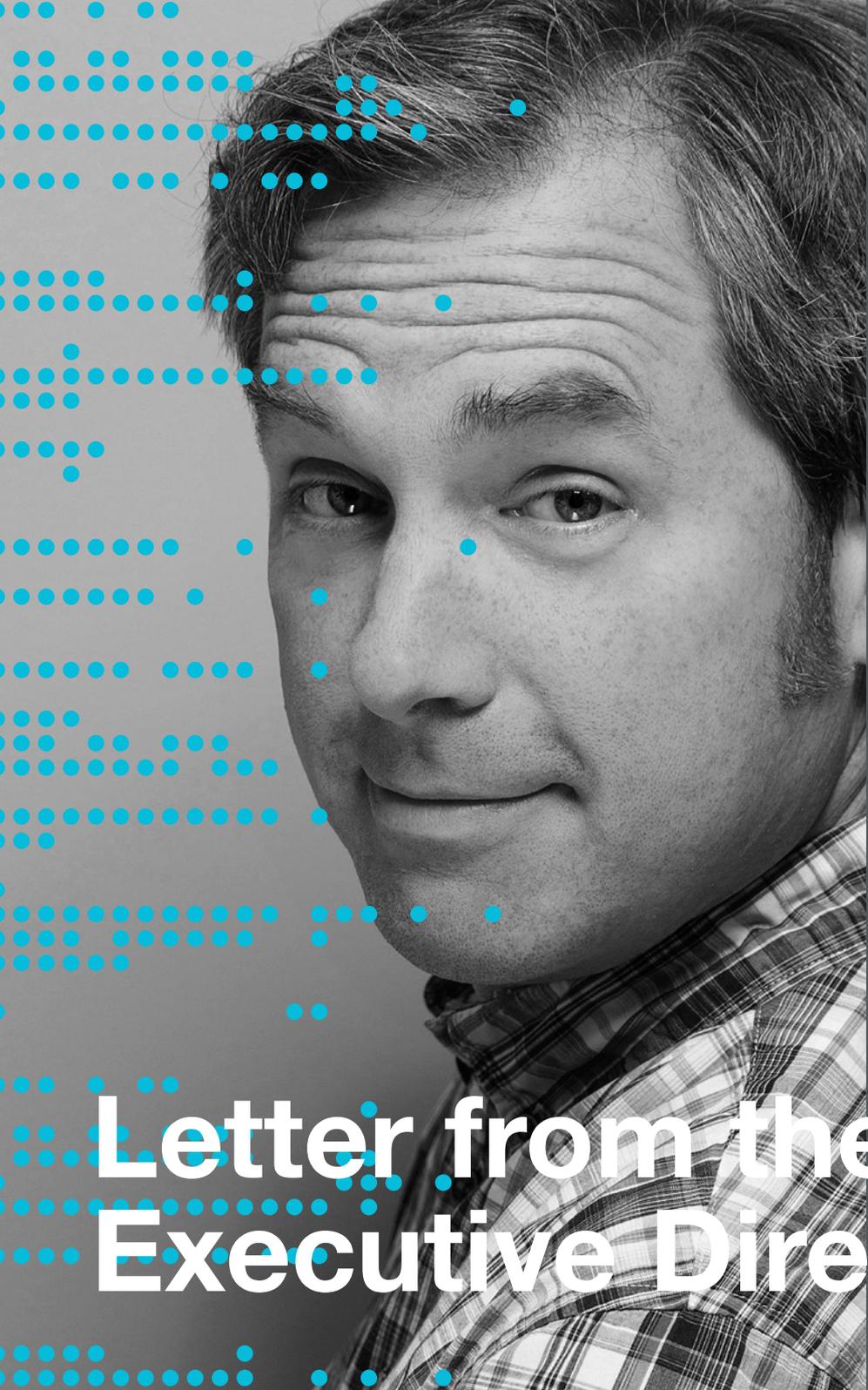
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CROSSREF

Crossref makes scholarly content easy to find, cite, link, and assess.

We're a not-for-profit membership organization that exists to make scholarly communications better. We rally the community; tag and share metadata; run an open infrastructure; play with technology; and make tools and services—all to help put research outputs in context.

**It's as simple—
and as complicated
—as that.**

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This annual report is a chance to tell people what we've been up to and how Crossref is doing. What is Crossref? We are an organization, of course, but we are much more than that - staff, board, working groups, and committees as well as a broad range of collaborators, users, and supporters in the wider scholarly communications community. This community contributes to our inputs, our outputs, and everything in between.

Letter from the Executive Director

Ed Pentz
Executive Director

It begins with our members - publishers and others from all disciplines, large and small, commercial and non-profit—from Chicago and Sao Paulo to Seoul and Vilnius. And, increasingly, our community includes new stakeholders like scholars, funders, and universities. Together, we are all working toward the same goal: **To enhance scholarly communications**

Everything we do is designed to put scholarly content in context so that the content our members publish can be found, cited, used, and re-used. Here's how:

We rally the community

Rally is all about community, working together to forge new relationships (human and machine) and pave the way for future generations of researchers. We like to push the envelope. That's why we got involved with the launch of Metadata 2020, a collaboration that advocates richer, connected, and reusable metadata for all research outputs. To learn more, check out the website at metadata2020.org.

It has been a busy year for Crossref outreach. We welcome 180 new members each month on average, and have members in 114 countries. We've made changes to ensure that our board represents the breadth and depth of our membership. We're launching an ambassador program and we've held LIVE events in even more corners of the world than before.

We tag and share metadata

We love metadata. After all, what's not to love about the ability to identify and connect new content types like preprints and, soon, peer review reports? The real value of metadata is in its use. Content Registration is where it all starts, but the benefits of metadata exchange are immeasurable. To make sure that our APIs have real, genuine utility, we've just introduced a new service offering so that platforms and tools can leverage the power of our rich, immense database to increase the value and discoverability of content.

Despite these many accomplishments there is more to do. Better and richer metadata? It's mission critical. More content types connected? Absolutely. But more than anything, I wish that as a community we can move beyond the basics. We need to work together to step it up, think beyond the tried and true, and work together to make sure that DOIs, although necessary, are not the be-all and end-all when they are, in fact, just the beginning.

We run an open infrastructure

Infrastructure is the sum of many parts—metadata, software, hardware, systems, and people—all working together. It's foundational. All our members and users share Crossref infrastructure so they don't have to go about the messy and time-consuming business of executing bilateral agreements with thousands of other organizations. This hub of activity is mostly invisible but it is extremely important in making sure that our metadata unlocks doors, opens minds, and stimulates new thinking.

We play with new technology

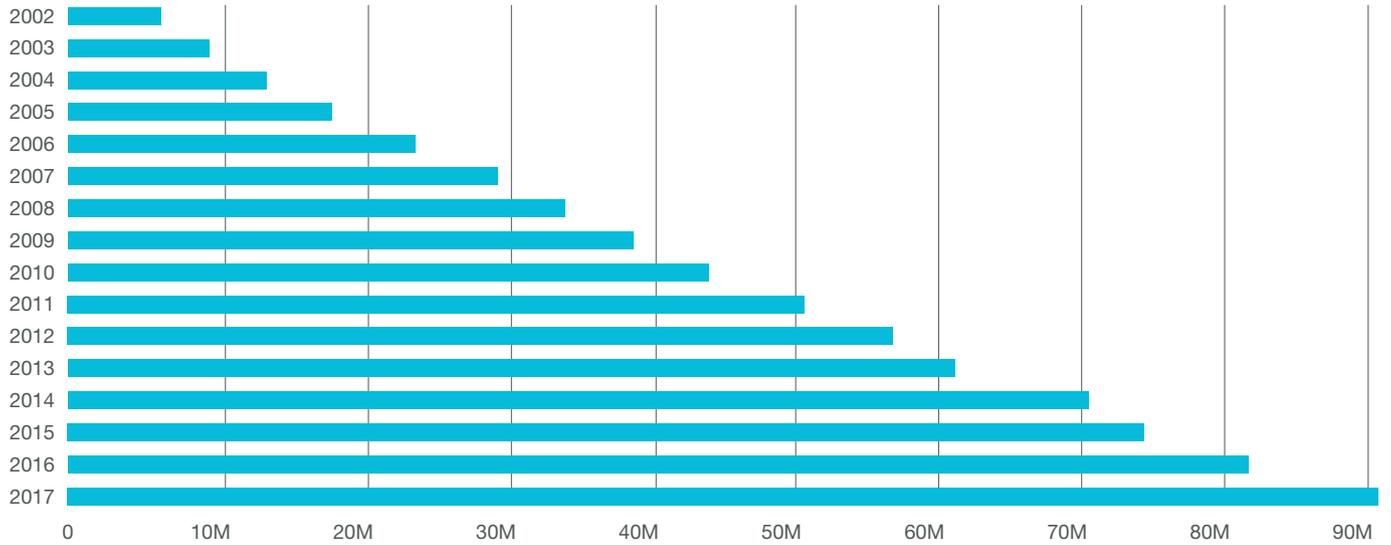
To keep pace with changes in the industry and stay true to our mission, we play with new technology with the goal of offering a bigger and better infrastructure with new types of identifiers like Organization IDs and Grant IDs. Collaboration with other organizations like ORCID and DataCite plays an important role. Sometimes we lead from the front, sometimes we participate where others lead.

We make tools and services

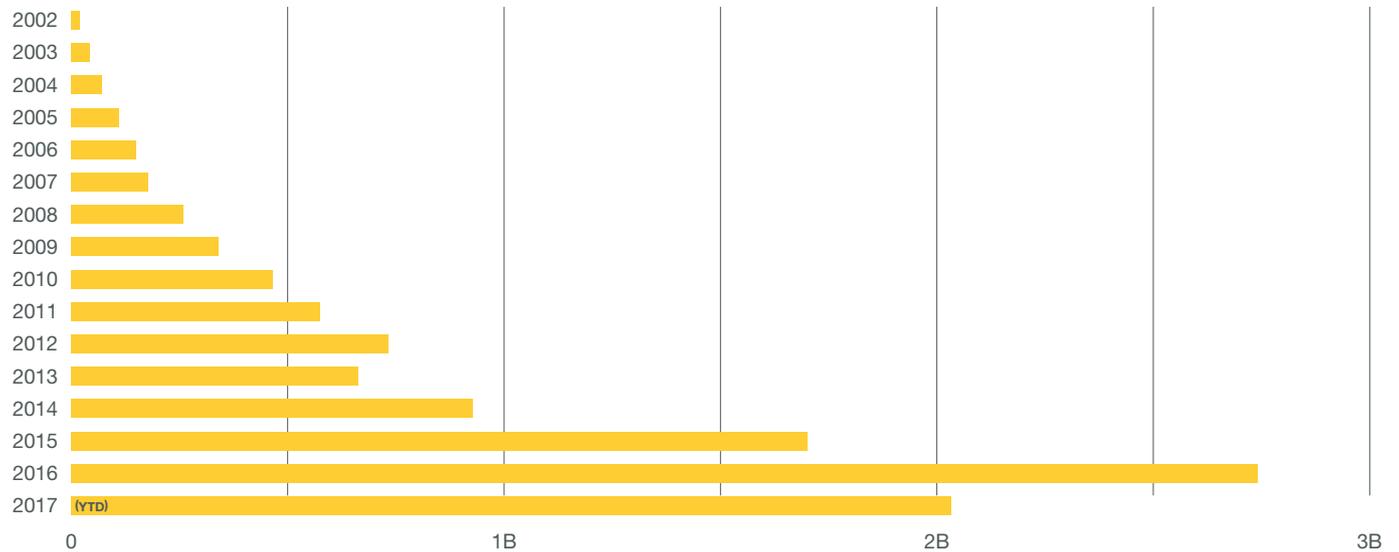
And then there are new and exciting services like Event Data, which is a great example of putting scholarly research in a wider context. We're laying the groundwork based on what our members and the community are telling us they need. It's a combination of our own knowledge and experience and also listening to the community.

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Registered content



DOI resolutions



It is with this letter that I wish the Board of Directors and Crossref staff a fond farewell. It has been an honour and a pleasure serving with many of you and for all of you. It's hard to believe I have been on the Crossref Board since 2000, back in the days when there were just 12 founding members.

Crossref is a fantastic organization. It has always had a strong staff, and with its recent expansion, has grown into teams of highly skilled and capable individuals.

Crossref was initially conceived as a behind-the-scenes organization to provide the "hidden plumbing" to facilitate persistent cross-platform links from references in scholarly, peer-reviewed works to their source documents.

But it has become a much more expansive and visible organization, and made a conscious decision to highlight the Crossref brand. Now it's top-notch staff is positioned to lead in more broadly architecting the scholarly publishing infrastructure, well beyond providing the plumbing for reference linking.

Crossref has also had very strong boards, which have provided the strategic will to build the several services Crossref offers the scholarly community today. The board-staff relationship fuels the creative energy needed for a genuine partnership where both board and management evolve strategy and implementation in working toward a shared vision.

Crossref was built by publishers with a focus on infrastructure needs that are best managed collaboratively. In meeting the goals of publishers it has served the broader scholarly community well. Its

core function was, and still is, the linking of references across platforms. Scholars around the entire world are clicking these links at phenomenal rates, collectively examining the cited sources three million times every day of the year.

In the process of building that linking structure, Crossref has accumulated an enormous metadata database from the publishers who, for the most part, provide very well-curated metadata, resulting in a highly structured database of close to 100 million content items.

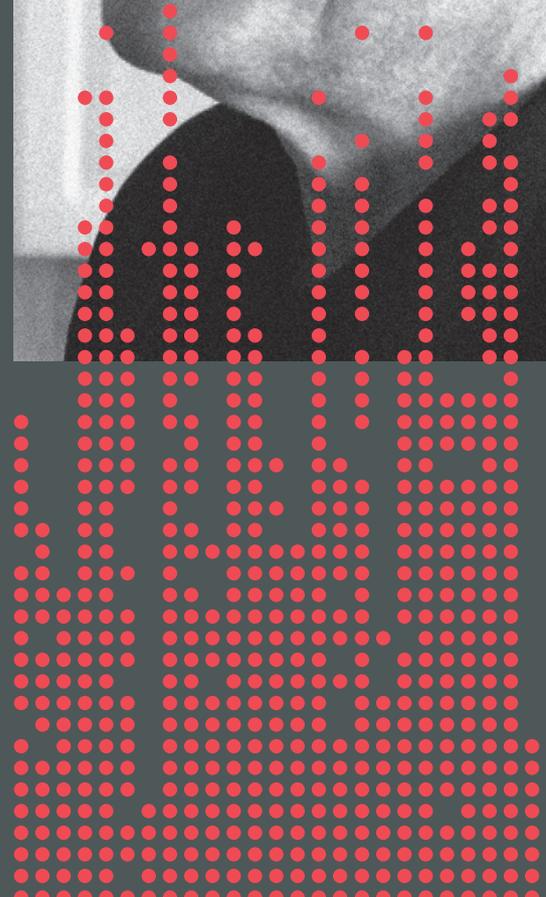
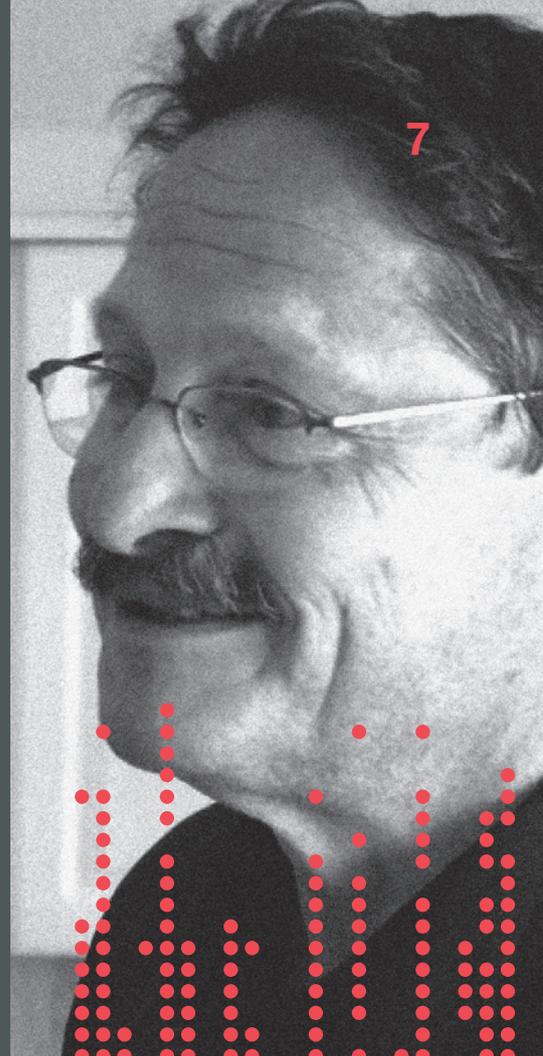
The metadata is strong now, but it would be even more valuable with universal publisher participation in contributing abstracts, references, funding data, provenance, normalized author affiliations, and ORCID iDs.

As we look toward the future, Crossref is confronted with some major strategic questions that simultaneously offer opportunities and pose hard challenges with some risks for the organization.

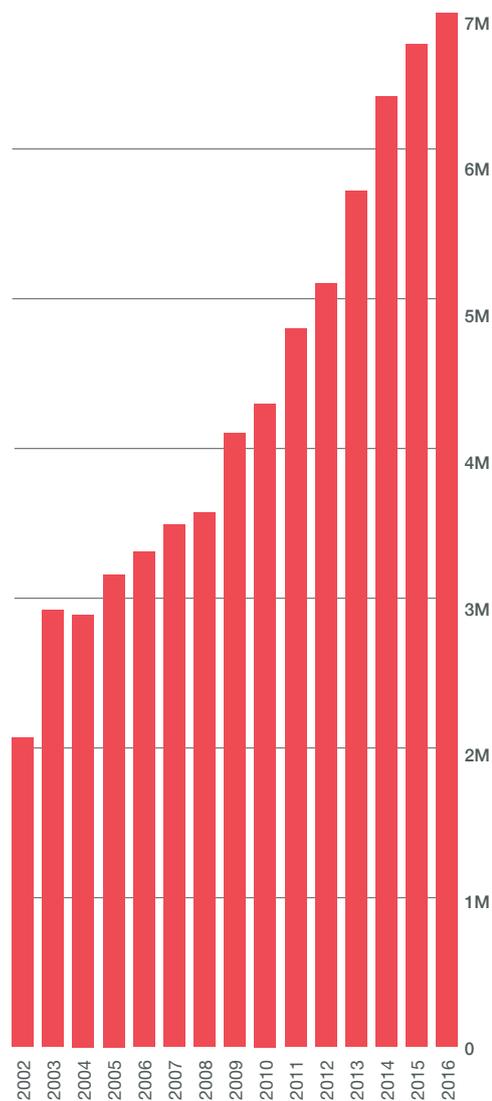
I leave Crossref with my best wishes and hopes that the combined talent and sagacity of staff and board will chart a successful course among these complex, forking paths.

Bernard Rous
Chair, Board of Directors

Letter from the Chair



Revenue growth by year (Millions)



Statement of activities

Years Ended December 31, 2016 and 2015

	2016	2015
Unrestricted Net Assets:		
Revenue and support:		
Deposit fees	\$ 4,426,246	\$ 4,061,633
Member fees	2,684,468	2,588,708
Interest income	22,818	23,368
Investment return	36,220	18,690
Total revenue and support	7,169,752	6,692,399
Expenses:		
Salaries, taxes and benefits	3,835,082	3,362,961
Travel and entertainment	625,968	626,632
Data center	376,679	366,128
Advertising and marketing	343,221	119,037
Other general and administration expenses	298,523	181,466
Registration fees, related party (Note 3)	263,117	258,260
Rent	184,254	204,798
Professional fees	179,875	261,865
Depreciation	160,056	226,482
Consulting	71,052	87,211
Dues and subscriptions	54,499	43,032
Product development	33,019	-
Insurance	25,642	29,405
Bad debt expense	24,353	24,843
Program initiatives	7,393	18,568
Total expenses	6,482,733	5,810,688
Change in net assets from operations	687,019	881,711
Other expenses:		
Foreign currency exchange loss, net	117,453	35,721
Loss on disposal of property and equipment	15,725	4,602
Total other expenses	133,178	40,323
Change in total net assets	553,841	841,388
Net assets, beginning of year	6,634,308	5,792,920
Net assets, end of year	\$ 7,188,149	\$ 6,634,308

Crossref completed 2016 in excellent financial position, reflecting continued growth in our membership and deposits.

The organization closed the year with revenue of \$7.1M – missing our target revenue budget by 1%. Our expenses of \$6.5M came in 3% over budget, yielding an operating margin of 9%, down 4% from prior year.

The primary drivers of our business continue to be membership and deposits, together accounting for more than 95% of our revenue.

In relation to 2015, both revenue and expenses rose, with a revenue increase of 7% and an expense growth of 12%. Our revenue/expense imbalance reflected increases in staff costs required to propel new initiatives and expanded outreach to members.

Our year-end overall cash position of \$5.1M increased 6.3% over the prior year. In 2016, the Crossref Board directed \$150,000 of excess operating cash toward a Capital Investment Fund and also invested an additional \$100,000 in an existing Capital Reserve Fund.

Our annual financial audit was positive, with no major negative findings. In addition to our annual financial audit, in 2016 we opened the organization's financial and security infrastructure to an operational audit as prescribed by the American Institute of Certified Public Accountants (AICPA). That audit, referred to as "SOC1", gave us reasonable assurance that all appropriate operational controls are in place to ensure continued service to our members and community.

Crossref has been debt-free since 2007. The organization's solid financial standing has allowed us to hold membership fees at 2008 levels and deposit fees at 2006 levels.

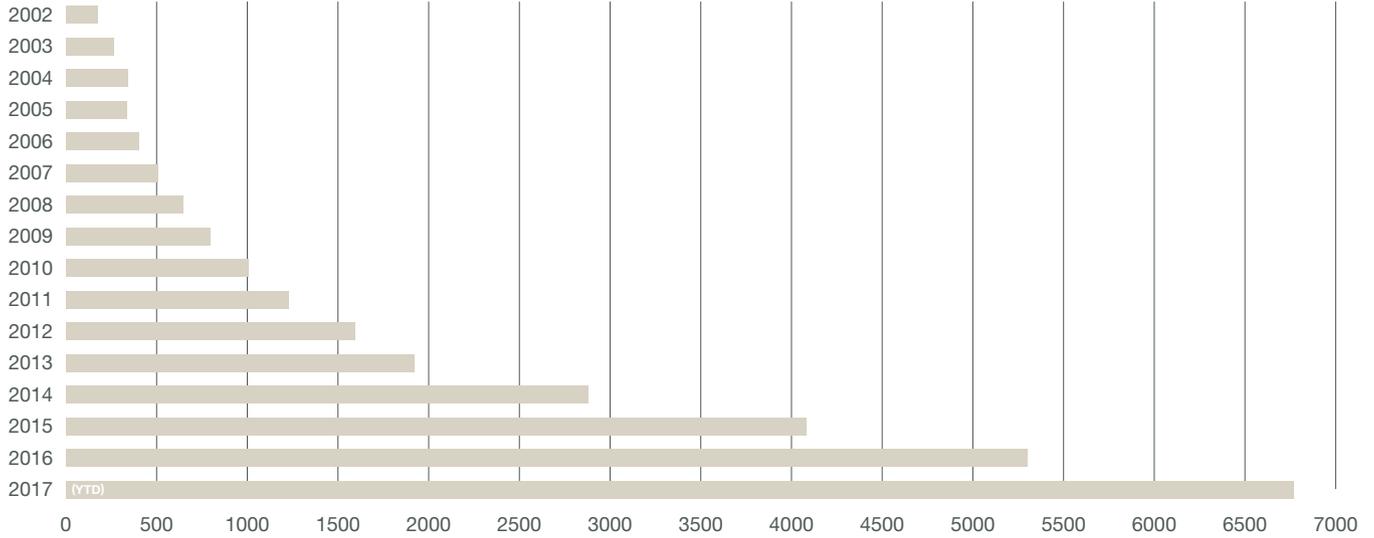
As we grow we will continue to be challenged to deliver value to our members and the community at-large while delivering on our promise of persistence; strong financial oversight is key to reaching those goals.

Gerry Grenier
Treasurer

Letter from the Treasurer



Voting members



Crossref is governed by a board of directors that comprises 16 representatives and meets in person three times a year in March, July, and November.

At the 2016 Annual Member Meeting, the following individuals were elected to serve three-year terms: Helen King, BMJ; Mark Patterson, eLife; Chris Shillum, Elsevier; Graham McCann, IOP; and Wim van der Stelt, Springer Nature.

At the July meeting the Board typically spends a significant amount of time on strategic planning in addition to its usual activities such as financial oversight, approving investment in new services based on staff and committee recommendations, reviewing and approving policies and fees for new and existing services, and generally making sure Crossref is healthy and well run.

This year we worked with a facilitator to look farther into the future than normal using a technique called scenario planning to map out “strategic agendas” for the next five years. Scenario-based strategic planning doesn’t try to predict the future but allows us to be flexible in planning by looking at a range of different possible eventualities. This is particularly useful for Crossref because scholarly research and communications is changing rapidly and we operate in a very complex environment.

Our facilitator prepared 12 “critical uncertainties” - impactful issues that could go either way and that will affect how Crossref works, its mission, and even whether it needs to exist. To develop the critical uncertainties, the facilitator interviewed Crossref staff, board members, general members, and scholarly communications community influencers and we held a preparatory group exercise at the March board meeting.

The facilitator was able to summarize Crossref’s distinctive competencies as:

- Having a reputation as a trusted, neutral one-stop source of metadata and services
- Managing scholarly infrastructure with technical knowledge and innovation
- Convening and facilitating scholarly communications community collaboration

To be successful Crossref will need to continue to invest in, apply, and evolve these distinctive competencies and strategic dilemmas and challenges.

Over a day and half of discussions and breakout sessions the board and staff drew up a number of scenarios and created a draft strategic agenda for Crossref, which we will be working on and presenting to members.

Governance & strategy

We asked members of the community to reflect on Crossref's activities over the last year. We spoke to:

Kevin Dolby

Lead Analyst
Medical Research Council

Rod Page

Professor of Taxonomy
University of Glasgow

Paul Peters

Chief Executive Officer
Hindawi

T. Scott Plutchak

Director of Digital Data Curation Strategies
The University of Alabama at Birmingham

Wes Royer

Director, Product
Silverchair Information Systems

Rui Seabra

President
Brazilian Scientific Editors (ABEC)

Dario Taraborelli

Director, Head of Research
Wikimedia Foundation

Jure Triglav

Lead developer
Collaborative Knowledge Foundation (Coko)

Here's what they had to say.

Rally

Getting the community working together to make scholarly communications better.

Rallying the community is the bricks and mortar, the foundation of everything that we do. The end goal? Getting everyone in the community to work together to improve scholarly communications.

"Crossref is a collaborative effort. As the rallying point, they have a unique position," says Scott Plutchak, Director of Digital Data Curation Strategies, University of Alabama at Birmingham.

"There are the practical issues that require them to be in touch with a lot of people to solve these problems.

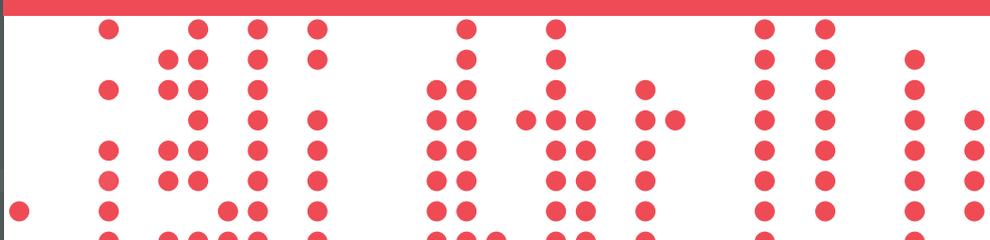
There is also the social construct of the community. It's a world of many different points of view and economic models. We need a framework of commonality about how we all make the systems better. Crossref is in a position to foster and support that."

In its essence, Rally can be broken down into three primary objectives: Outreach, Collaboration, and Representation.

Outreach

A big part of our outreach program is onboarding new members and providing ongoing support to existing members. We're expanding our outreach team and investing in new system integrations so that we can provide the services required to meet the needs of our growing membership. We're also working to increase awareness of Crossref with key audiences such as funders and researchers.

"I have been aware of Crossref for a long time for its work in the publishing sector, but it has often been a little on the fringe of the wider funding and academic communities," observes Kevin Dolby, Lead Analyst at the Medical Research Council in the UK. "However, over the course of the last couple of years the organization is becoming a far more visible presence within these communities and, equally importantly, I think the role Crossref can play – and the value that it can add – is being more and more appreciated by these communities."



Crossref LIVE events bring together members of the community for updates, feedback, and discussion. It's a healthy mix of topics and speakers on all things Crossref and, more broadly, on scholarly communication.

Dario Taraborelli, Director and Head of Research at the Wikimedia Foundation attended Crossref LIVE in London in 2016. "I was delighted to see the focus of Crossref's outreach expand to non-traditional partners and data consumers beyond scholarly publishing: there's a much larger community of actors that can amplify and contribute to Crossref's mission. Initiatives such as PIDapalooza are also a promising way of building a broader ecosystem. We're also grateful for Crossref's active participation in our WikiCite series over the past two years."

The launch of our the new Crossref Community Ambassador programme will mean the number of local LIVE events will continue to grow.

Collaboration

Working in cooperation with other organizations to increase reach and influence is another important aspect of rallying the community. Crossref has collaborated with DataCite, ORCID, and Project THOR on a number of projects and has hosted several joint events. "I like that Crossref is at events such as WikiCite, which I attended in Vienna," says Rod Page, Professor of Taxonomy at the University of Glasgow. "Great that people like Geoff Bilder, Rachael Lamme, and Joe Wass were there. Helps get both a policy and a developer's perspective."

Metadata 2020 is a collaboration of stakeholders throughout the community. We came up with the idea, kicked it off, and play an active role, but we are just one of many players. "There's an acknowledgement that what they're trying to do cannot be done by Crossref alone. Conceptually, that's about all of the interconnectedness of what we call metadata and the importance of looking at it very holistically as opposed to a set of individual products and services," says Scott.

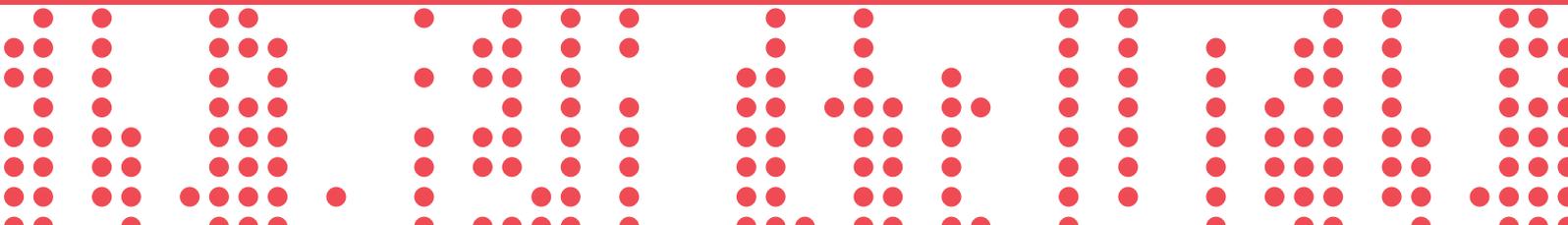
Representation

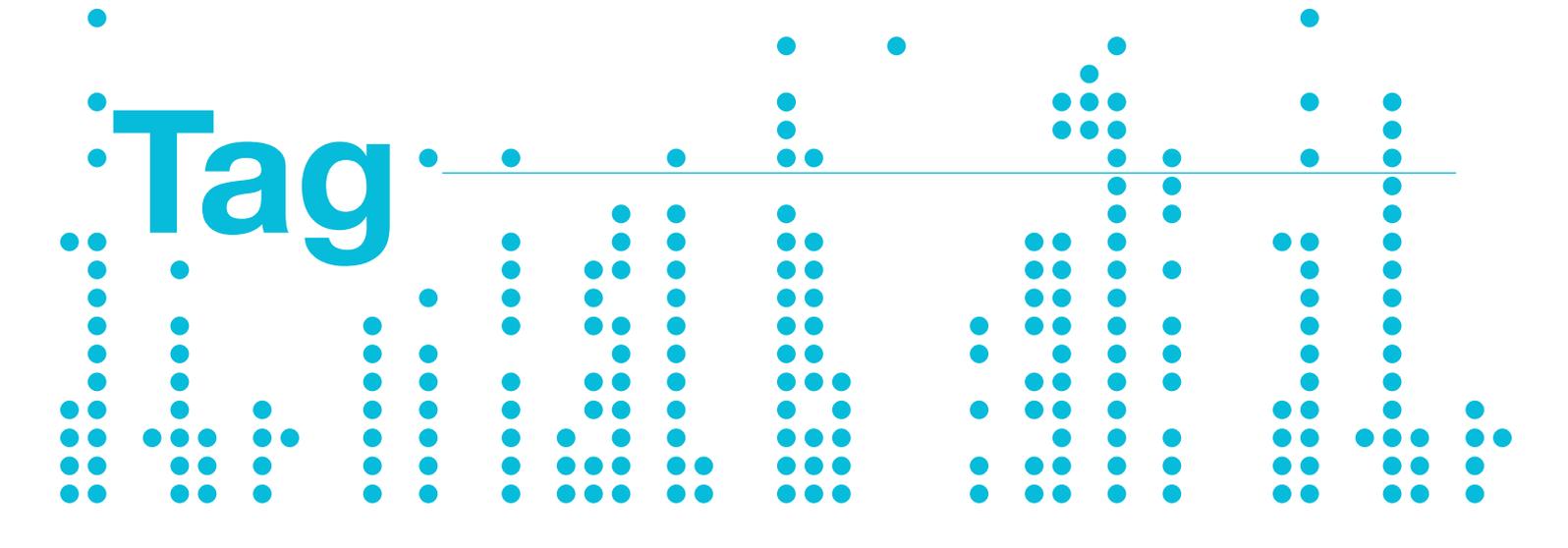
A big part of rallying the community is making sure that our members' needs drive the agenda. To ensure that our governance represents the broad interests of our membership we opened up expressions of interest in board participation. Advisory groups play an instrumental role in all new initiatives and, increasingly, we are setting up special groups for key stakeholders like funders.

"Crossref is a known and respected presence in the scholarly ecosystem, represented well at industry conferences, and responsive to questions and requests from the community," says Wes Royer, Director of Product at Silverchair Information Systems. "And with a growing list of services available to various players and roles, Crossref is actively helping to improve research and discovery."

Crossref LIVE events held over the last year:

Campinas, Brazil	Beijing, China	Boston, USA	Seoul, South Korea	London, UK	Turkey (online event)	São Paulo Brazil	Yogyakarta, Indonesia
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Tag

Structuring, processing, and sharing metadata to reveal relationships between research outputs.

Richer metadata means better discoverability of scholarly research. That means more content types, new identifiers, and streamlined processes. Paul Peters, CEO of Hindawi, is one of many publisher members who sees the value of new content types.

“I’m very happy to see Crossref continuing to develop, both in terms of the content types that it includes as well as in the quality of metadata in the registry. As both of these trends continue, the value of Crossref as a key piece of the scholarly communications infrastructure will continue to develop.”

Increasing the breadth and depth of the content that we tag has also been positively received by affiliates and the broader community. “Data citation, organization identifiers, and Event Data—there just seems to be a much broader look at the entire ecosystem and the role Crossref can play to really support a much more robust, interconnected world of scholarly communications,” says Scott.

“It’s great that Crossref is expanding their activities and suite of services. I have a particular interest in their ongoing work to better define metadata on funding information, and establishing a system of organization identifiers,” says Kevin. “Given the important role that many Crossref staff played in the success of ORCID, I believe the organization is in an excellent position to make these projects successful.”

Preprints

The growing number of preprint deposits (20,000 and counting) is testimony to the community’s willingness to embrace new content types. “Preprint support, in particular, has been a big game changer and I am very excited to see the opportunities this new addition will open up,” says Dario.

“The interest in preprints is an outcome of this growing awareness over the last 15 years of a much broader array of research products. Where I come from, which is primarily the biomedical community, when people would talk about arXiv, the consensus was, ‘That might be fine over there in physics but that won’t work for medicine’,” recalls Scott. “Now the NIH is encouraging people to point to preprints. There has been a 180-degree turn with the biomedical crowd, which I would suggest is the hardest group to turn.”

Crossref members are also taking advantage of the matching service, part of our custom infrastructure for preprints, and have established over 5,000 links back from journal articles to their associated preprints.

Rui Seabra, President of the Association of Brazilian Scientific Editors (ABEC) observes, “The acceleration in the availability of data from preprints will take human knowledge to a new level. Traditional scientific journals will have to adapt to this new performance by acting as certifiers of those published results.”

Also check out peer reviews, a new content type that we added to our schema at the end of October 2017.

Better basics

To keep pace with changes in technology for secure linking, we’ve updated the DOI display guidelines to <https>. “Crossref’s new display guidelines included easy-to-follow documentation and a helpful support email to ask more detailed questions,” reports Wes.

Doing the basics well still has value, especially for the researcher. “The ability to get lists of Cited-by references as part of the metadata for a DOI is huge for me as I’m trying to locate and make much of the older cited literature accessible, and discovery is a big problem,” says Rod. “The list of references is a big help.”

New tools to help members meet best practice are in development. “Normalizing metadata is a long process, but I’ve seen the tools that are about to launch at

Crossref, for example, Participation Reports, and I think that’s a good way forward,” says Jure Triglav, Lead developer at the Collaborative Knowledge Foundation (Coko).

“Crossref is in a position to implement standards and best practices among publishers that can dramatically advance the efficiency and transparency of scholarly communications at large,” says Dario. “Rich linked metadata, improved data quality, and increased data coverage are key to building platforms to make scholarly content more discoverable across publishers.”



Run

Operating a shared, open infrastructure that is community-governed and evolves with changing needs.

If Rally is the bricks and mortar, the Crossref infrastructure is like the wiring. This intricate architecture of software and hardware keeps things running smoothly and seamlessly so that publishers can deposit metadata and the community at large can extract and use it.

Neutrality and centrality

“Crossref’s ability to create the infrastructure is fundamentally tied to its non-profit status and collaborative approach. I think building on that collaborative spirit is key,” says Scott. “They are really in a position to develop trust and build tools and infrastructure that everyone can buy into because they don’t occupy that competitive, proprietary space.”

“It’s really hard to imagine where the whole scholarly enterprise would be if something like Crossref had not been created. That this kind of linking activity, the desire that created Crossref, could have been developed in a proprietary fashion and then we would have a variety of competing products that would not be interconnected... and we would all be poorer for that.”

Metadata In

“Without this shared, open infrastructure, it would be significantly more difficult for researchers to find the content necessary to continue their research,” says Wes. “We help to facilitate this use of the Crossref service by including links to content referenced in journal article content. By including direct links on the site to other research and Crossref quickly processing DOI linking, we hope that researchers are more easily able to find content they are looking for.”

“At the moment we mainly depend on Crossref to provide persistent reference linking, which has been its core activity for many years now,” reports Paul. “However, as the quality and breadth of its database expands we will hopefully be able to depend on it for many purposes that we currently rely on proprietary databases to provide.”

What’s on the horizon? Look out for Metadata Manager, a new easy-to-use interface that lets members register content with Crossref without needing to know anything about XML or the details of the our metadata schema. Metadata Manager is especially designed for small publishers who have limited technical skills or staff. It’s currently in the testing phase with member publishers and we hope to roll it out more widely in the beginning of 2018.

Metadata Out

Developers integrate Crossref metadata into their software through our APIs. Acting as a metadata exchange between publishers and third parties is essential to meeting Crossref’s strategic aims, removing the need for them to make bilateral agreements. That’s why the Board agreed to remove the option for case-by-case opt outs for metadata delivery. The power of metadata is evident in many new and exciting initiatives.

“Our volunteers and tool developers at Wikimedia have been working on a daily basis with Crossref infrastructure and APIs to provide the best possible source metadata for content in Wikipedia and Wikidata,” says Dario. “The increased availability of Cited-by data, encouraged by the Initiative for Open Citations, has literally opened up entirely new opportunities for reusing citation data in Wikimedia projects and linking up content to its scholarly sources. As of October 2017, 36 million citation links are available in Wikidata: an impressive milestone.”

“Openness is very important for a public funder such as the Medical Research Council as we want to maximize the value of the research we fund and Crossref’s work will increasingly help us to do this,” says Kevin. “We already make use of Crossref data through our Researchfish online reporting tool, and through developments such as data citation, linked clinical trials and event data, I’m sure the value of this data will increase in the future.”

Rod uses the Crossref API to inform his research. “I spend a lot of time trying to link names for species of animal and plants to their original description in the literature, and Crossref’s API is invaluable. I use the APIs almost daily.”

At Coko, they use Crossref’s REST API for building keywords from DOI to citation tools. “It’s a tremendous resource that comes without any strings attached and works very reliably,” says Jure. “We think this particular API is a great gateway into Crossref’s metadata and we’re happy to see it grow.”

Play

Engaging in debate and experimenting with technology to solve our members' problems.

Think Crossref, think metadata, not just DOIs. We're building a bigger, better infrastructure with a registry of, for example, organizations. Long before a new service is launched it is incubated by our lab and many, if not all, new initiatives are the by-product of collaboration.

As Scott points out, one advance often leads to another. "I don't know that I see it as a shift so much as an evolution and a way of taking every step of development as Crossref brings it to fruition to ask, 'What more can we do with this? How does the fact that we've solved this problem highlighted another problem and what do we need to do to address that?'"

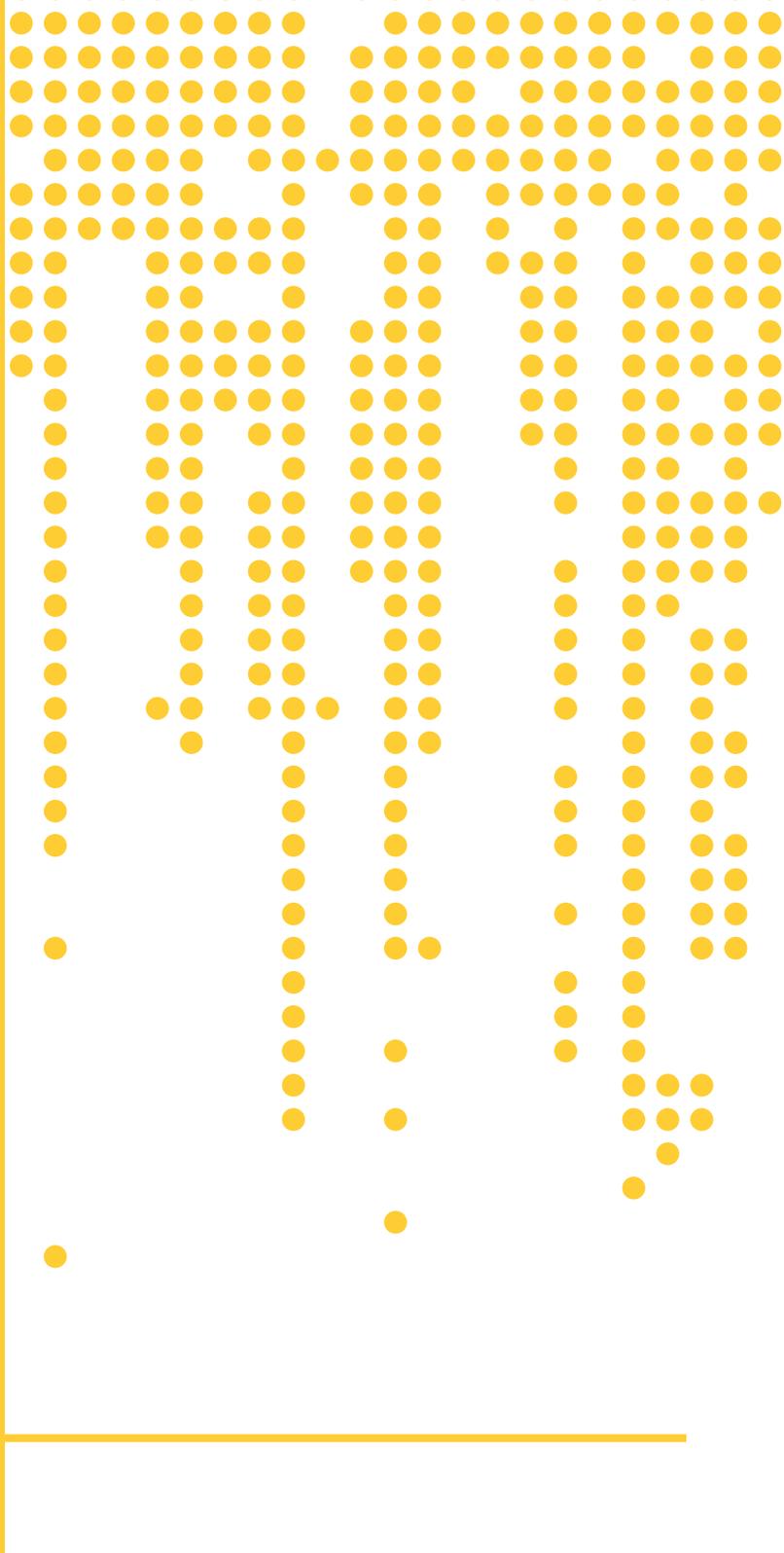
Organization identifiers

Now that the problem of identifying researchers is being solved through ORCID, many members agree it's time to turn our attention to organization IDs. "It's only reasonable to try and disambiguate (and make machine-accessible) researchers' organizations," says Jure. The Organization Identifier (Org ID) Working Group was established as a joint effort by Crossref, DataCite, and ORCID in January 2017. "I think that Org IDs are hugely important and I am happy that there are serious efforts underway to begin building a solution in this space," says Paul.

"It's not an easy problem to solve – and many organizations have looked at the issue - but I think Crossref is in a great position to pull all the relevant stakeholders in to get on top of organization IDs," says Kevin. "Whilst there are many obvious advantages (I've spent way too much time compiling data on research papers from the same organization but under slightly different names), the potential for linking data and pre-populating assessment systems is a more distant, but attractive goal."

"With the success of DOIs for outputs and ORCID iDs for contributors, the standardization of organization IDs feels like a next logical step in making the scholarly record more discoverable and traceable," observes Wes.

For metadata users, organization identifiers is a big move forward. "The Wikidata community is eager to reuse and cross-link any identifiers that can help us better represent organizations and connect them to their Wikipedia articles," says Dario. "As a community member in the Wikimedia movement, I am looking forward to seeing this proposal come to life."





Make

**Creating
tools and
services
to enable
connections
and give
context.**

There are a lot of new services in the pipeline, including Event Data, which is based on open source technology that we helped build along with DataCite. Event Data offers transparency around the way interactions with scholarly research occur online, allowing users to discover where it's bookmarked, linked, liked, shared, referenced, and commented on across the web.

Crossref worked with a number of data sources to develop the tool, including Wikimedia. Dario reflects on their experience: "We have been following with a lot of excitement Crossref's progress on Event Data: events about DOI usage in Wikipedia were a significant piece in building a case for the service and we're delighted to see it officially supported. A service making low-level, authoritative data about DOI usage and mentions available to everyone under open licenses embodies the notion of a data clearinghouse that many of us in the altmetrics movement have been envisioning for years."

Transparent and open

The name Event Data reflects the nature of the service, as it collects and stores digital actions that occur on the web, from the quick and simple, such as bookmarking and referencing, through to deeper interconnectivity such as exposing the links between research outputs. Each individual action is timestamped and recorded in our system as an event, and made available to the community via an API.

“There’s some really interesting potential in Event Data, and I hope it expands from its current list of tracked data flows to cast even more light on how research papers are being accessed, shared, and discussed,” says Kevin. “It’s important that as much of this information as possible is made openly available.”

Event Data will be available for anyone to use; publishers, third party vendors, editors, bibliometricians, researchers, authors, and funders. With tens of thousands of events occurring every day, there’s a wealth of insight to be gained for those interested in analyzing and interpreting the data.

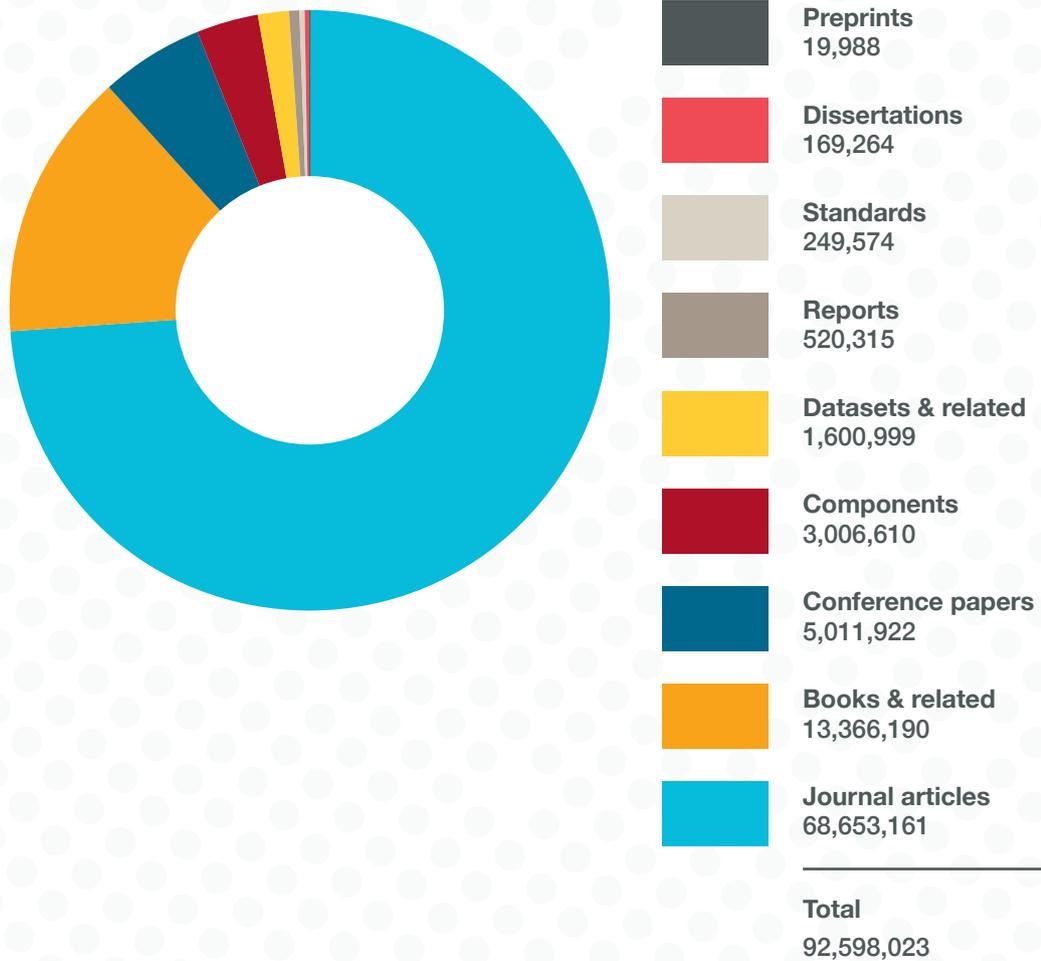
“As links to scholarly content become more and more distributed across public social channels, having a single source for tracking and analyzing the many paths to discovering this content will no doubt bring value to publishers and their marketing strategies,” says Wes.

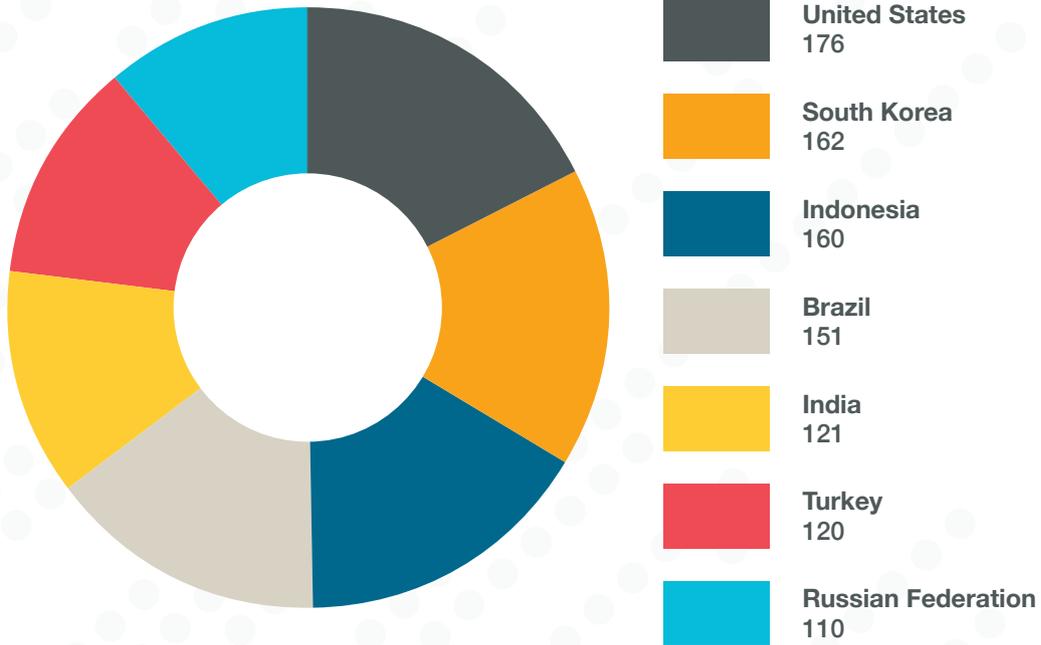
“Event Data is an initiative that also found space in the face of the new needs of researchers combined with the new tools of communication and social interaction. I believe that Event Data will promote links between research groups that would never have the opportunity to interact or even know each other,” adds Rui.

Metadata + Infrastructure + Relationships = Context

Information objects exist in multiple contexts. Event Data is the first of many new services that Crossref is developing to give the community context through metadata, infrastructure, and relationships. “What we need is the infrastructure and tools that allow us to see as many of those contexts as possible, that allow us to see the context that is relevant to the problem that we’re trying to solve,” says Scott. “If a researcher has a particular problem, they need to be able to follow the links so that they don’t get lost in this maze of interconnections. It’s about continuing to develop an infrastructure that gets us closer to that kind of model. They can’t do it alone, but Crossref can lead that charge.”

All types continue to grow, as new content like preprints are taking off.







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