Annual Report 15—16

Crossref

We are Crossref, a not-for-profit membership organization for scholarly publishing working to make content easy to find, link, cite, and assess. We do it in five ways: rallying the community; tagging metadata; running a shared infrastructure; playing with new technology; and making tools and services to improve research communications.

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

Letter from the Executive Director

Ed Pentz
Executive Director

It is often said, the best is yet to come. Events of the last 12 months would suggest that is true. Everyone who has contributed to our continued success—members, the board, our staff and the community at large—has much to be proud of. And we have only just begun!

The theme for this year's annual meeting sums it up: Smart alone, brilliant together. When I think about the many accomplishments of the last year, it is clear to me that none of it would be possible without collaboration. It is at the core of everything that we do. In fact, you could suggest it's the reason we exist.

The narrative in this year's report is organized around our "truths" - the core values that we hold dear. Crossref staff and the board worked together to write the truths. In sharing them with you, we review many of the highlights of 2015-16 so that you can see, first hand, how the values are manifested in the services we develop and the ways in which we engage with our members and the community.

We continue to grow at a fast pace, which in and of itself is a major accomplishment, and affirmation that we provide value to our members and the scholarly community. We know that engagement is key to creating a sense of community and to encouraging participation, especially for smaller publishers. Our outreach activities remain a top priority. We have developed new communications and engagement programs, and hired new staff to meet the evolving needs of our membership.

The last year has been a real juggling act. We've tried to do a lot at once and we've had to work hard to balance multiple priorities and, at the same time, stay focused. In the last year we have really upped our game on a number of fronts.

I am particularly proud of the fact that we've improved existing services like Crossmark while launching new services like ORCiD Auto-Update and adding preprints as a content type. What's next? Keep an eye out for Event Data, a service that will supply raw data on post-publication activities around scholarly content beyond formal citation. We will also continue to collaborate with ORCiD and DataCite on exciting new initiatives around organizational identifiers.

Thanks to sensible management Crossref remains financially sound. This enables investment in people and systems that will fuel our continued growth and the expansion of both development and member support. We have a great team and the structure required to meet the demands of a growing membership organization.

Looking at our trajectory, from Crossref's founding and to how it's grown, you might think that after 16 years we would be slowing down or levelling off. Nothing could be further from the truth.

We've always had a broad mission and we've never been short on ambition. Now we're better positioned to realize our goals.

Our deliberate, careful expansion will continue in 2017 and beyond.

It has been a great year and we're poised for many more. Thank you for your continued support. We couldn't have done it without you.

Registered content

| Year	
2002	
2003	
2004	
2005	
2006	
2007	
2008	
2009	
2010	
2011	
2012	
2013	
2014	
2015	
2016 (YTD)	

Axis: 0, 10M, 20M, 30M, 40M, 50M, 60M, 70M, 80M

DOI resolutions

Year	
2002	
2003	
2004	
2005	
2006	
2007	
2008	
2009	
2010	
2011	
2012	
2013	
2014	
2015	
2016 (YTD)	

Axis: 0, 100M, 200M, 300M, 400M, 500M, 600M, 700M, 800M, 900M, 1000M, 1100M, 1200M, 1300M, 1400M, 1500M, 1600M, 1700M, 1800M, 1900M, 2000M, 2100M
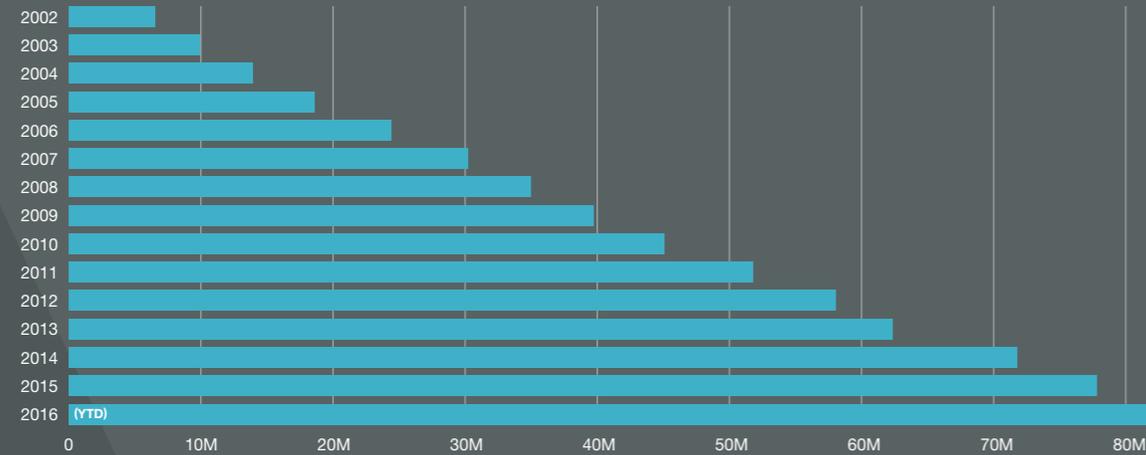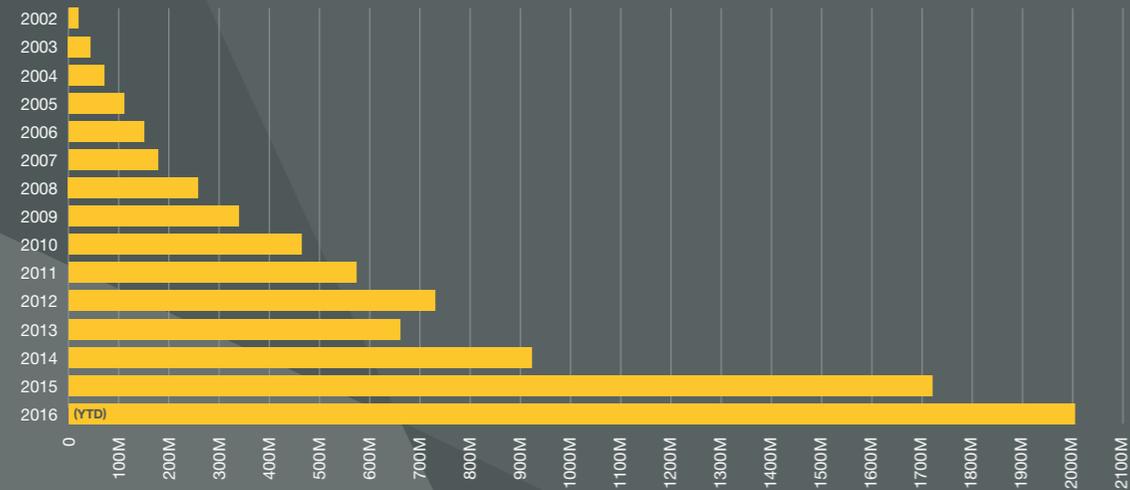
Bernard Rous
Chair, Board of Directors

Letter from the Chair
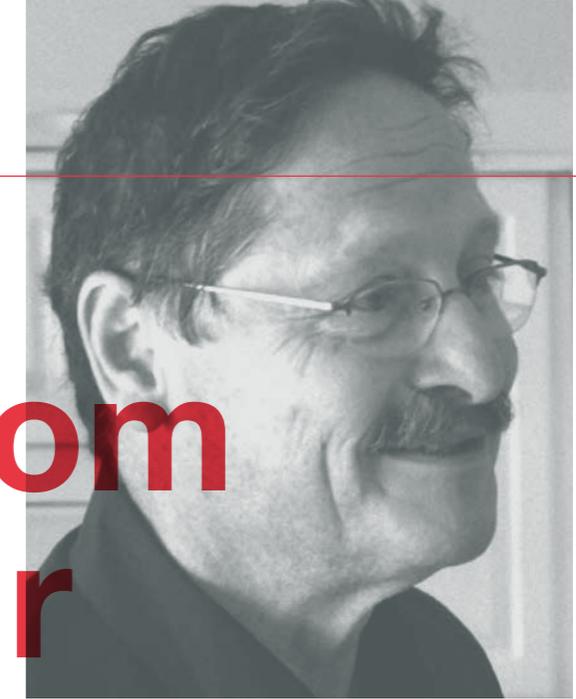
Scholars have resolved two billion references to their source documents on Crossref member sites over the past year! Our core business and original raison d'être is successful beyond expectation. This fundamental achievement has attracted a robust and steadily growing global membership. Healthy surpluses over the last five years have given us the opportunity to re-invest in a broader set of infrastructure services and a much expanded staff to develop and deliver them.

Scholarly publishing has seen many changes in the last decade. Its fundamental job of recording, communicating, and preserving the results of research remains the same, but the technologies and channels of production and delivery have evolved along with the organizations that perform this vital function.

Crossref has both responded to and helped shape some of these changes. As an entity, we are emerging from the shadows. Rather than a little-known provider of "invisible plumbing", we have built on our success to firmly establish the Crossref brand as an innovator of scholarly infrastructure that directly benefits a number of stakeholders even beyond its publisher members.

At the same time, much of our new investment is going to improve support to members, particularly for smaller publishers who need greater support in making the changes required on their end to fully participate in the expanding set of Crossref services.

Your board has evolved as well. It continues to attract highly motivated publishers with more diverse perspectives and

publishing experience who are willing to devote considerable time and energy to shaping and directing the evolution of our organization. We are most fortunate to have a truly outstanding staff, rife with talent and ideas of their own, to work with.

The rapid expansion and reorganization of staff over the past two years has been brilliantly managed by our Executive Director, Ed Pentz, the heart and soul of Crossref. I am looking forward to the coming year when the fruits of our investments can be harnessed in addressing several new challenges, foremost among them the disambiguation of author affiliation data.

Revenue growth by year
(Millions)

| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2014 | 2015 |
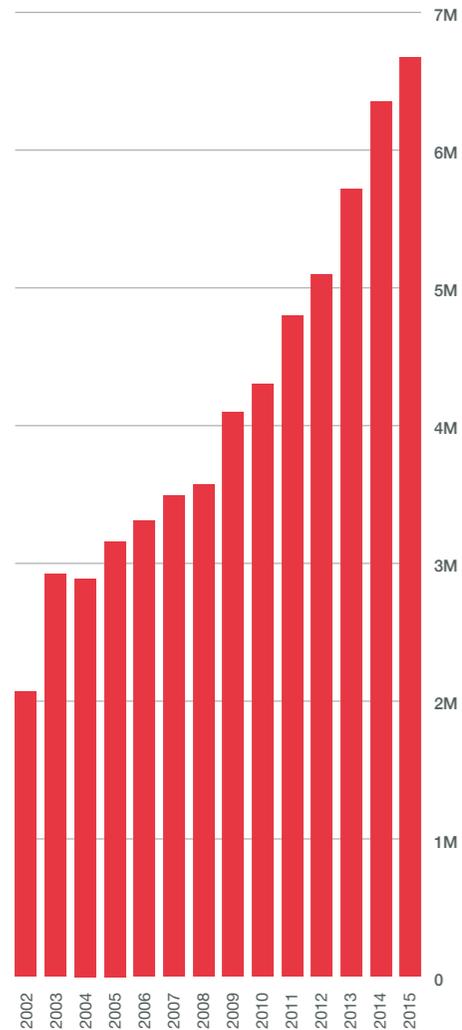
Statement of activities
Years Ended December 31, 2015 and 2014

	2015	2014
Unrestricted Net Assets:		
Revenue and support:		
Deposit fees	$ 3,847,587	$ 3,721,449
Member fees	2,802,754	2,628,179
Interest income	42,058	12,327
Foreign currency exchange loss, net	(35,721)	(33,699)
Total revenue and support	6,656,678	6,328,256
Expenses:		
Salaries, taxes and benefits	3,362,961	3,052,674
Travel and entertainment	626,632	402,638
Data center	366,128	460,585
Professional fees	261,865	261,182
Registration fees, related party (Note 3)	258,260	257,250
Depreciation	226,482	266,597
Rent	204,798	141,931
Other general and administration expenses	181,466	270,206
Advertising and marketing	119,037	65,080
Consulting	87,211	61,331
Dues and subscriptions	43,032	48,864
Insurance	29,405	28,948
Bad debt expense	24,843	37,753
Program initiatives	18,568	29,338
Total expenses	5,810,688	5,384,377
Change in net assets from operations	845,990	943,879
Loss on disposal of property and equipment	4,602	
Change in total net assets	841,388	943,879
Net assets, beginning of year	5,792,920	4,849,041
Net assets, end of year	$ 6,634,308	$ 5,792,920

Gerry Grenier
Treasurer

Crossref completed 2015 in a strong financial position. Revenue of $6,656,678 was two percent positive to budget, against expenses of $5,810,688 yielding an operating margin of 12.7 percent, down two percent from prior year. Both revenue and expenses were up over 2014—revenue was up five percent and expenses were up eight percent, reflecting our investment in new opportunities. The 2015 year-end overall cash position of $4.7 million exceeds our Board mandated goal to cover one quarter's operating expenses. Our cash position showed an 18% gain over the prior year-end allowing Crossref to increase its Capital Reserve Fund. The year 2015 brought another clean financial audit, with suggestions for a fuller system and security audit in the coming year.

The Treasurer, Executive Director, and Finance Director closely monitor Crossref's financial and investment performance—maximizing return at minimum risk. Crossref's healthy financial position ensures continued growth and contribution to its core mission of providing a sustainable infrastructure for scholarly communication.

Letter from the Treasurer

Voting members

Year	Members
2002	
2003	
2004	
2005	
2006	
2007	
2008	
2009	
2010	
2011	
2012	
2013	
2014	
2015	
2016 (YTD)	
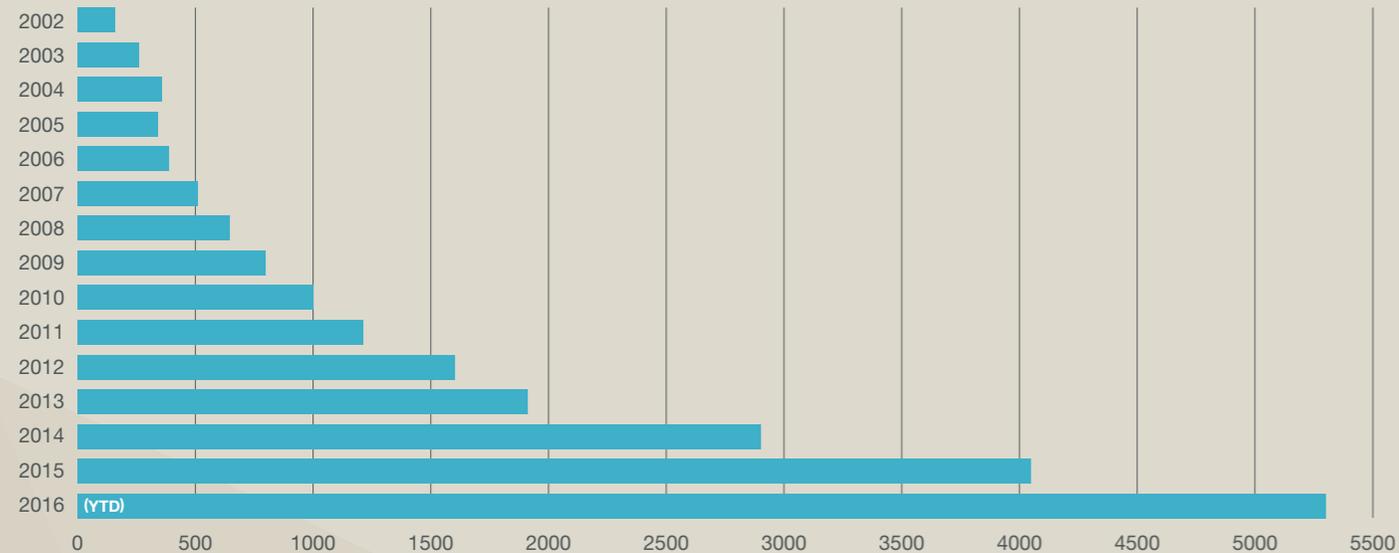
The Crossref Board of Directors comprises 16 representatives, listed later in this report and at Crossref.org. At the 2015 Annual Member Meeting, the following individuals were elected to serve three-year terms: Ian Bannerman, Informa UK; Paul Peters, Hindawi; Bernard Rous, ACM; Peter Marney, Wiley; and John Shaw, Sage Publications.

A facilitator helped guide the July 2016 meeting of the Crossref Board of Directors, where we examined effective, best practice for the governance of an association board. The session covered a number of issues including the formation of associations, the importance of trust and information flow between the board and the association members, the role and responsibilities of the board, the use of the "representative governance" model, the importance of consensus, the role of the Executive Committee, and the use of meeting agendas as a tool for good governance.

Crossref is moving forward with a number of actions identified at the meeting, including developing new election and committee policies with a view towards increasing transparency, developing the strategic roadmap for 2017, and revising and clarifying financial policies.

Governance

Smart alone, brilliant together

Collaboration is at the core of everything we do. Our focus is on things that are best achieved by working together. We involve the community through active working groups and committees.

Our job is to make content easy to find, cite, link, and assess. If there's a problem that needs to be solved, we're all over it. "Everything we do is because our members have asked us to help them develop a solution to a problem that they are confronted with," explains Geoffrey Bilder, Director of Strategic Initiatives. "Our members come to us and say: 'We've got this problem that we want you to help us address.' We don't dream these things up."

All Crossref projects start with a working group. The most recent case is Crossref Event Data, a community-led service coming soon that will provide open data on events that occur around scholarly research objects on the web. Event Data will track shares, mentions, and likes from social media, sharing platforms and blogs, as well as links to datasets—no mean technological feat.

"Working together with DataCite and ORCID is a great example of collaboration in action," says Ginny Hendricks, Director of Member and Community Outreach. "Aligning messages, sharing strategies, and future planning are just the beginning. We all serve parts ultimately of the same community so it makes sense that we're swapping ideas and leveraging resources."

The three organizations also share technical know-how and code. "We try to share infrastructure and techniques," says Geoffrey. "Event Data is a really strong example of that. It's not just that we worked with our members, but also very closely with DataCite to create an infrastructure that lays a foundation to provide links between publications and data (i.e., data citation), which has been a big issue over the past four or five years."

Another example is our project with ORCID to ensure author records are updated automatically. "All of our services are developed with member workflows in mind," explains Chuck Koscher, Director of Technology. "For example, the auto-update service is designed so that when an article is published we can automatically push that into the researcher's ORCID record."

The Crossmark 2.0 launch was also a collaboration. "We worked with a broad stream of inputs to redesign the button and display—the committee, a wider group of user testers and a survey across all CrossMark users. This massive community-engagement effort resulted in a more effective Crossmark that plays well on the article pages of an extremely diverse set of journals, whether on mobile or computer," says Jennifer Lin, Director of Product Management.

"One of the critical things that we do is help our members meet new obligations by staying in touch with what is happening within the broader scholarly community," Geoffrey explains. "That's why we're developing Early Content Registration. We want to encourage our members to register their content as early as is feasible, even if that means registering their content even before it's online, so that they can meet new funder requirements."

Internally, the Crossref team collaborates to improve workflows with the goal of streamlining member services. "In the early days, all of this used to be manual. Now we have a cloud-based reporting and accounting program and integrated applications. Even our CRM program integrates with accounting," observes Lisa Hart Martin, Director of Finance and Operations.

"We've started to look more globally and we're working more closely with sponsors and affiliates in different countries," adds Ginny. "All year we've been doing workshops in local regions and we've laid the groundwork to launch our new ambassador program very soon."

Last but by no means least is a new initiative called Metadata 2020. "It is just getting off the ground but it has been in the works for almost a year," says Ed Pentz, Executive Director. "It's all based around the notion that by working together we can build a framework that will make scholarly content more discoverable—stimulating new lines of inquiry, encouraging collaboration, and fuelling innovation. It's going to be big!"

It's all based around the notion that by working together we can build a framework that will make scholarly content more discoverable.

If you publish, you're a publisher

We are a global community of members, large and small, who publish scholarly content in all disciplines and in many formats. We define publishing broadly; your business model is your business.

Crossref membership continues to grow at a fast pace with 150 new members a month for a total of 1,600 new members so far in 2016. "There has been a tremendous expansion in membership," says Lisa, who has been with Crossref since day one. "When we started we were half US and half UK/European members. Now the bulk of our new members are in Asia and South America, and we're growing in all corners of the world. As a result, we're starting to explore different membership models to cater to regional and cultural differences."

As government research investments change around the world, so too does Crossref membership. "We're seeing such a different range of new members joining—many of them smaller and open access," ponders Ginny. "In Turkey there's been a huge investment in research, Indonesia has recently instituted a mandate to register scholarly content, and there are loads of other such cases around the world."

Growth in membership means a new approach to engagement. "How will we welcome and train all of these new members? We can't just expect everyone to come to our meetings anymore," observes Ginny. "And, it's not feasible to make 150 phone calls a month so we have to adjust our thinking and focus."

"Many of our members don't consider themselves to be primarily a publisher," says Ed. "For example, the WHO doesn't think they're a publisher, but they do publish a lot of scholarly stuff. What we're trying to do is build services that apply to different kinds of members".

"We're building our services to support publisher differences," explains Geoffrey. "We're doing a lot to change our system so that we can address different kinds of workflows. For example, a member might have a preprint, or reviews of content, that might not be considered formal publishing but it is, ultimately, scholarly communication. We need to create persistent links for all of that."

Chuck expands: "The board's decision to include preprints is an excellent example. We don't make a quality judgment. Some might call it a preprint, some might call it a working paper, but there is more in common than divides."

Responding to the needs of all publishers—whether large or small—is a priority for the entire team. "Different publishers want to register content in different ways. The new metadata deposit project will overhaul a pretty antiquated deposit form. We have people that can help them but we're also building a system that will make new deposits and updates easy," says Jennifer.

We're doing a lot to change our system so that we can address different kinds of workflows.

One member, one vote

Our board comprises a cross-section of members and it doesn't matter how big or small you are; every member gets a single vote.

As Crossref and its membership grow, good governance becomes even more important. The organization is guided by its board and 16 years of experience. "Our board appoints a Nominating Committee each year which operates separately from the board," says Lisa, "and the committee membership changes each year and includes non-board members, which means there is always a fresh perspective."

"The Nominating Committee has a remit to propose a fair and representative slate," adds Ed. "They look at organization size, type, geography, and evaluate potential candidates to be put forward as the slate for the board election every year."

"The 'one member, one vote' truth also means extending the opportunity to use that vote," says Ginny "I'm pleased that our members have voted in record numbers this time around".

Another board committee is the Audit Committee. "This important group helps us meet our fiduciary responsibility," Lisa explains, "they appoint an independent auditor and oversee the financial reporting process."

One of the most important committees is the Membership and Fees Committee which is tasked with making recommendations to the board about fees for new services and with monitoring current fees to determine if any changes are needed. The committee also discusses the policies associated with our services.

"Members also contribute to Crossref through committees and working groups," says Ginny, "participants play an important role in helping to develop project priorities and set policies. At Crossref, committees and working groups are valued contributors, not mere window dressing".

At Crossref, committees and working groups are valued contributors, not mere window dressing.

We do R&D to support and expand the shared infrastructure we run for the scholarly community. Building on the metadata we collect, we use standard web technologies and create open source tools and services to help our members solve problems and meet best publishing practice.

We do R&D to support and expand the shared infrastructure we run for the scholarly community. Building on the metadata we collect, we use standard web technologies and create open source tools and services to help our members solve problems and meet best publishing practice.

"We're now launching things with more thought and more collaboration internally," says Ed. "We developed linked clinical trials, which is an example of how we facilitate linking data with publications. There are clinical trials that weren't linked to the literature in the past but that technology is available now."

"I'm a big believer in agile development," declares Jennifer. "Cohesion and coordinated iteration is key. Now our teams are all working in concert using the same process so that we can develop, test, and deliver new products and features with more focus and speed which is better for our members."

"We've been doing a lot of work developing Event Data which started by exploring how we can better expose when literature is referred to outside of the scholarly ecosystem—like Facebook, Wikipedia, etc. We've done a lot of work to engage with those communities and we've been working to collect information from our referral logs on how and where content is talked about," says Geoffrey.

Almost every service that we've launched, every new functionality that we've added, is collecting and using another set of metadata.

"In general, almost every service that we've launched, every new functionality that we've added, is collecting and using another set of metadata and increasingly that's non-bibliographic metadata like clinical trials, licensing, and funding information. All of this stuff is based on more kinds of metadata and different uses, and more and more third parties are making use of it," notes Geoffrey.

Crossref infrastructure is the engine behind many services and initiatives throughout the community. Chuck explains: "Whether it's online editing systems or tools that help identify the research you publish, our infrastructure helps make it happen."

Most Crossref services can be grouped into two broad categories—Metadata In and Metadata Out—both designed to improve research communications. "On the one hand we meet the direct interests and needs of our members. At the same time, we work with others who use Crossref metadata in the products and services they develop," expands Ginny.

Love metadata, love technology

Politic, not political

Our broad and inclusive community may have different views, but when it comes to law and policy, Crossref remains impartial.

Being impartial isn't easy but at Crossref it's mission critical. "Impartiality is an important part of serving the scholarly community worldwide," says Lisa. "It isn't the kind of thing that increases our revenues, but it does fulfill our mission."

"We're here to serve all our members—large and small, new and established," reaffirms Ed. "Being impartial means that we are able to serve the entire scholarly community."

Similarly, Crossref metadata is open to everyone. "Crossref doesn't make a judgment about the quality of content and we don't verify publishing practices. It's not our job and it wouldn't really be good for the community because what if we got it wrong?" explains Ginny.

We're here to serve all our members— large and small, new and established. Being impartial means that we are able to serve the entire scholarly community.

We are obsessed with persistence - of links, of our technology, and of the organization. Membership and service fees cover our costs, and our surplus means we can do new things and sustain the community infrastructure for the long term.

Crossref remains independent and financially sound. "No one is propping us up. We are really in it for the long term," notes Ginny. "We need a solution for the attribution of scholarly research—who did what work, where, and thanks to whom. We want to be an organization that the whole community can still rely on in 20 years and beyond."

Financially, Crossref is in very good shape. "Because we have a reserve fund, and we're investing prudently, we're in a position to do things that we weren't able to do in the past," explains Lisa.

"Our members' fees sustain Crossref and contribute to the whole of the scholarly publishing infrastructure," says Ed.

From an operational perspective, Crossref is constantly looking for opportunities to reduce overhead. "We use low cost cloud-based accounting and CRM systems and we're in the middle of changing banks, which will be a saving of $40,000 a year in incoming wire fees alone," reports Lisa.

"We want to lower the barriers to membership. We have programs that waive the deposit fees for some members from low-income countries, and the Sponsoring Affiliate program means that many small members don't have to pay a separate membership fee. Now we're looking to formalize our approach to low to middle income countries and establish fees in local currencies. Those are the models we're looking at now," says Lisa.

Here today, here tomorrow

We are Crossref, a not-for-profit membership organization for scholarly publishing working to make content easy to find, link, cite, and assess.

"I would love for our members to say, 'I contribute to Crossref.' I want everyone to feel that they have a stake in the organization," says Ginny. "We want members to see that we're listening to them and trying to improve things. We've four outreach managers now and that role wasn't even a concept a year ago. We want to be proactive and invite people in."

"We'll keep banging the drum on persistent links and richer metadata," says Ed, "as an infrastructure organization, Crossref may sometimes seem to recede into the background. However, a lot of thoughtful work takes place out in the open. We value transparency, and want to be held accountable to our Truths."

"It's not just that we register content with persistent identifiers but that we're also building things on top to meet specific requirements for our members. In the past we conflated the DOI and Crossref but not all DOIs do the same things," explains Jennifer. "Crossref adds value and has services beyond just resolving the identifier to the artifact, to the scholarly record.

We have a lot of services on top. And just because it has a DOI doesn't mean that it's Crossref's."

"It's not going to be easy because some of our members are not aware of everything that Crossref offers. That's where our ambassadors have an important role to play," adds Lisa. "We have a lot of people who are travelling and doing more outreach than ever before and that's a good thing. That's the biggest challenge and the most exciting aspect of our growth. Meeting more members on the ground."

We are Crossref

Content types

Journals
63,816,169

Books and Book Chapters
11,387,731

Conference Proceedings
4,610,659

Components
2,557,604

Total
82,372,163

Journals

Year	
2002	
2003	
2004	
2005	
2006	
2007	
2008	
2009	
2010	
2011	
2012	
2013	
2014	
2015	
2016 (YTD)	

0   5000   10000   15000   20000   25000   30000   35000   40000   45000   46000   47000   48000
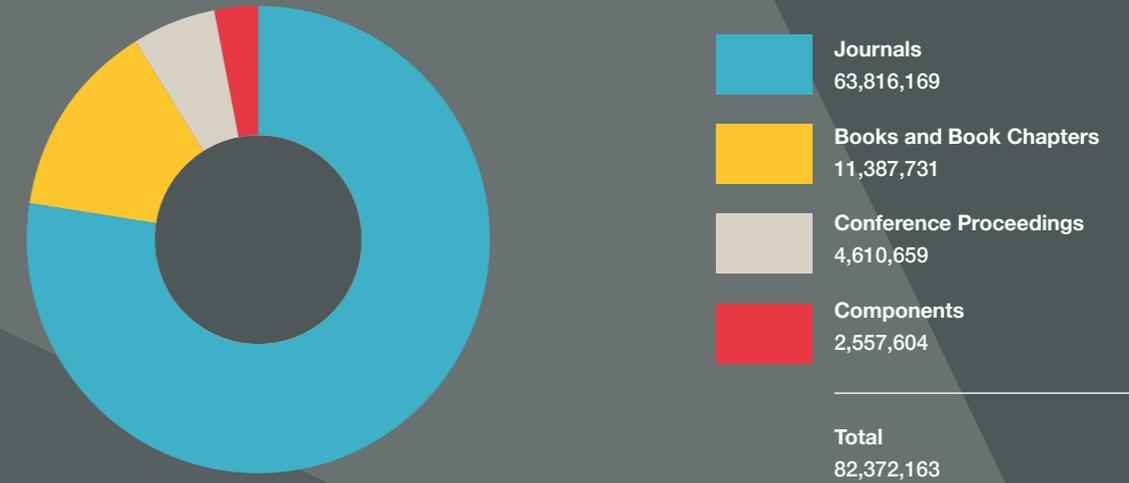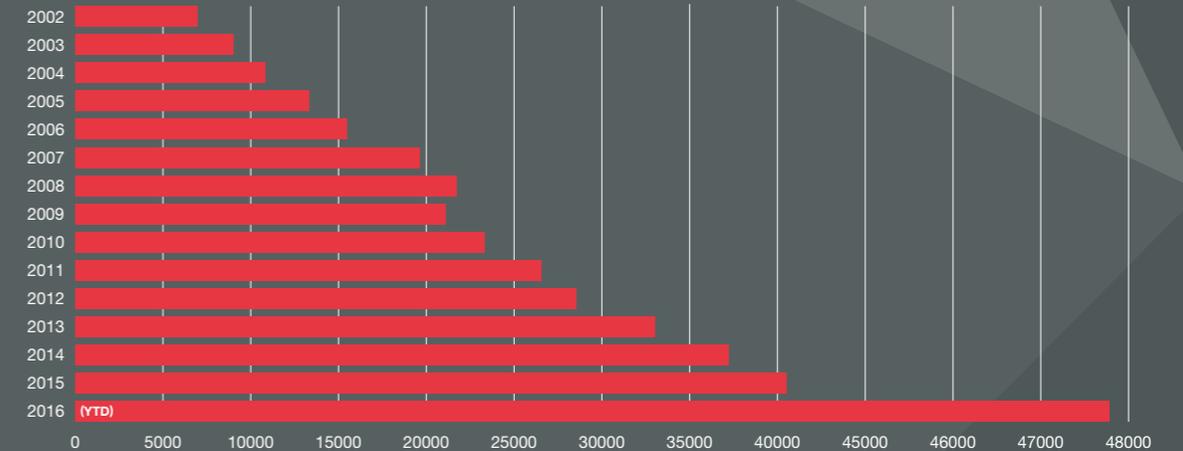
Crossref staff

Amy Bosworth	Assistant Accounts Receivable Manager
Andrew Gilmartin	Senior Software Developer
Anna Tolwinska	Member & Community Outreach Manager
April Ondis	Marketing Manager
Chuck Koscher	Director of Technology
Ed Pentz	Executive Director
Geoffrey Bilder	Director of Strategic Initiatives
Ginny Hendricks	Director of Member and Community Outreach
Jennifer Kemp	Member & Community Outreach Manager
Jennifer Lin	Director of Product Management
Joe Wass	R&D Programmer
Jon Stark	Software Developer
Karl Ward	Principal R&D Engineer
Kirsty Meddings	Product Manager
Larisa Osmanaj	Senior Staff Accountant
Lindsay Russell	Assistant Human Resources Manager
Lisa Hart Martin	Director of Finance and Operations
Madeleine Watson	Product Manager
Maria Sullivan	Staff Accountant
Mike Yalter	Software Developer
Patricia Feeney	Product Support Manager
Paula Dwyer	Controller
Rachael Lammey	Member & Community Outreach Manager
Rakesh Masih	UX/UI Designer
Rosa Clark	Marketing Coordinator
Shauna Lee	Office Manager
Shayn Smulyan	Product Support Associate
Susan Collins	Member & Community Outreach Manager
Tim Pickard	System Support Analyst/Administrator

Board members

Chair

Bernard Rous
Alternate: Scott Delman
Association for Computing Machinery (ACM)
Term: 2015-2018

Treasurer

Gerry Grenier
Alternate: Michael Forster
The Institute of Electrical and
Electronics Engineers, Inc. (IEEE)
Term: 2014-2017

Secretary

Lisa Hart Martin
Crossref

**Executive Director/
Assistant Secretary**

Ed Pentz
Crossref

Board Members

Jason Wilde
Alternate: John Haynes
AIP Publishing LLC
Term: 2014-2017

Jasper Simons
Alternate: Tony Habash
American Psychological Association (APA)
Term: 2014-2017

Chris Shillum
Alternate: Philippe Terheggen
Elsevier
Term: 2013-2016

Paul Peters
Alternate: Craig Raybould
Hindawi
Term: 2015-2018

Ian Bannerman
Alternate: Genny Early
Informa UK
Term: 2015-2018

James Walker
Alternate: Graham McCann
IOP Publishing
Term: 2013-2016

Kathleen Keane
Alternate: Bill Breichner
Johns Hopkins University Press
Term: 2013-2016

Helen Atkins
Alternate: Louise Page
PLOS
Term: 2013-2016

John Shaw
Alternate: Richard Fidczuk
SAGE Publications
Term: 2015-2018

Wim van der Stelt
Alternate: Volker Boeing
Springer Science + Business Media
Term: 2013-2016

Eleonora Dagiene
Alternate: Irma Cizauskaite
Vilnius GediminasTechnical
University (VGTU) Press
Term: 2014-2017

Carsten Buhr
Alternate: Johannes Buchmann
Walter de Gruyter
Term: 2014-2017

Peter Marney
Alternate: Duncan Campbell
John Wiley & Sons, Inc.
Term: 2015-2018

Y. H. (Helen) Zhang
Alternate: Dongming Lu
Zhejiang University Press
Term: 2014-2017

Crossref

2015-16 Annual report — November 2016