figshare

Insights into the Economy of Open Scholarship:

A look into Figshare with Mark Hahnel, CEO

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About Figshare

Figshare is an online digital repository where researchers can preserve and share their research outputs, including figures, datasets, images, and videos. For individual users it is free to access and to upload content. Figshare also offers a paid option licensing the infrastructure to institutions, publishers, and funders. It is one of a number of portfolio businesses supported by Digital Science.

figshare.com

Figshare: Business model

Key activities

- Repository for data and other research outputs
- Issues digital object identifier (DOI) for each uploaded item
- Licensing of infrastructure to third parties

Organisation type

- Commercial company
- Approx. 40 full-time equivalent (FTE) staff

Key partners

- Digital Science
- Institutions
- Publishers
- Funders
- Hosting infrastructure lies with Amazon

Revenue streams

- Licensing fee for infrastructure
- Part of the Digital Science portfolio

IP/Copyright

- Free version: uploaded materials CC BY or CC0 (public domain)
- Licensed (paid for) version: uploaded materials can be public domain, full copyright or all types of open licences
- Source code: closed

Customers/users

- Individual researchers
- Publishers
- Funders
- Institutions

Partially based on the Business Model Canvas designed by: **Strategyzer AG (strategyzer.com)** (available under CC BY-SA 3.0)

Interview with Mark Hahnel

Being led by a researcher, Figshare has always intended to be based on researchers' needs – but with a firm nudge towards open. In the free version only very liberal open licences (or even public domain dedication) are possible, but Figshare is more flexible when licensing the infrastructure (which is a paying service).

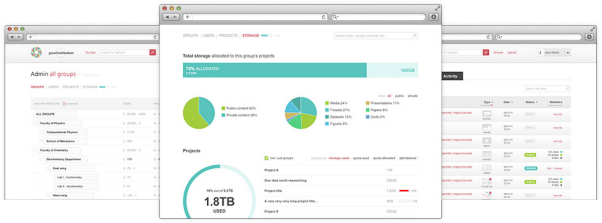
"At Figshare, we believe that all academic outputs should be as open as possible, as closed as necessary," says founder and CEO **Mark Hahnel.** "In the very early days we actually worked from the idea that 'everything needs to be as open as possible' but, as we started to operate in the global market, we developed a more nuanced view. As it turns out, not all research can and should be made openly available immediately – researchers can have bona fide reasons not to do this. But, if they want to, we are there to facilitate it."

> "We believe that all academic output should be as open as possible, as closed as necessary."

As Figshare is operating in a commercial startup environment [currently a part of the **Digital Science** (digital-science.com) portfolio, Gwen Franck], the team has been forced from the start to think about sustainability and scalability. Moreover, states Hahnel, especially in academia, commercial activity in the field of research data management is often frowned upon - so it is very important for Figshare to be candid about all its activities: "We have to be transparent about our workings. We are accountable to our clients and are forced to provide clarity about our budgets, our timelines and the services we provide."

Figshare operates on two different tracks: figshare.com offers free services to end users and the company also licences the infrastructure to paying customers, such as research institutions and publishers.

The company started out as a business to consumer (B2C) service – providing free data storage services to researchers. Because Figshare only offers the option to licence the data as **Creative Commons (creativecommons.org)** Attribution (CC BY) or even put it in the public domain via Creative Commons Zero (CC0), they consider this free service as essential to their core mission.



Example of an institutional dashboard

> Our free service only offers CC BY and CC0 as options. We believe that nudging our users in this direction – it's 'the price' they pay – is essential to making research as open as possible.

"Our main value proposition is that we offer a free, lightweight service, not only addressing storage and facilitating sharing, but also focusing on metrics so that our users actually see the benefit of using our services. Our free service only offers CC BY and CC0 as options. We believe that nudging our users in this direction – it's 'the price' they pay – is essential to making research as open as possible. With data sharing, you will always have a large proportion of users that don't use our service because they want to make their work open, but because they have to – because they are being forced by their institution or funder," says Hahnel. "These people will not use our services because they have made an entire cost-benefit analysis, but because we're convenient. They might as well use an institutional or disciplinary repository for their purpose. This realisation made us move into the business to business (B2B) model more, where we provide our services to institutions, publishers, and funders."

The company employs over 40 full time members of staff, so a steady income is necessary to cover these overhead costs. "Licensing out our infrastructure allows us to establish a level of sustainability while keeping the researcher-oriented services free. Offering the paying service also addresses the common fear that, at some point, we will try to sell the data they accumulate with our metrics services. Because the licensing feature provides a sustainable income, this fear is unjustified," says Hahnel.

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"And about the fear of us being bought by one of the big publishers I can only say that we don't plan to do it and, in any case, our bylaws offer enough protection for the data that we store.

"We don't really have any alternatives to this business model. Switching our free service to an ad-based model is not realistic. We are not in the ad-selling business, we provide technology. Changing this would have a lot of logistical and legal consequences that would take up so much space."

Figshare has offices in London, Romania and Washington DC, with remote staff working from Australia, South Africa, the US and western Europe. "If you asked us four years ago, I'd say that the general demographic profile of our staff was your typical 25-35 year-old white male, but we're making an effort to become more diverse. With an increased focus on operations instead of technical services diversification has become necessary. If we want to expand our services to other regions we also need to ensure multi-lingual support," says Hahnel.

There are no plans to outsource the work as these remote workers are all on the Figshare payroll. However, politico-economic trends and events such as Brexit and trade wars have made the need for local capacity clear. International travel might become more difficult in the future. But distributed working also has its issues, for example, when working with local human resource (HR) offices.

Hahnel is confident that increasing demand for Figshare services will counter any eventual logistical difficulties: "We might not offer the most competitive wages in the business, but we're pretty lean and can offer a lot of flexibility to our employees. People want to work for us for a number of reasons but, for me, the most important thing is that they subscribe to our principles. We can provide really good infrastructure for any type of research output. The technology behind our services remains the same and we can cater to almost any request. The question is whether we want to. We don't have the ambition to become a 2,000-person company, so we need to make tough choices now and then about whether we go after a specific part of the market. Pre-print sharing, for example – we decided to include this in our services five years ago and that proved to be a good guess. I don't have any set rules to decide what we will and won't do. As CEO, I decide whether we'll take part or not.

"In 2011, we were simply in the right place at the right time," says Hahnel. "The technology that we rely on was there (**DataCite** (datacite.org), **Crossref** (crossref.org), **ORCID** (orcid.org), cloud computing) and allowed us to offer simple and lightweight solutions to data sharing issues researchers faced. The emergence of cloud computing, in particular, was a big help in addressing policy clashes many researchers faced – especially when it comes to data. Institutional polices, which focus on marketability and patents and the potential of spin-offs, often differ from more open-oriented funder policies."

These policy clashes often occur: "One department, or the library, wants to implement our services but then another department sees a clash with internal intellectual property (IP) regulations. This is a major issue that needs to be addressed at supra-institutional policy and funder level."

During the startup phase Figshare could benefit from the business savviness of its investors [at Digital Science, Gwen Franck], who, much sooner than the general research community, realised that open data policies would become a main funder requirement in the years to follow.

Hahnel: “A big benefit is that I am a researcher myself. I am a stem cell biologist. I had datasets, videos, and images and I had nowhere to store and preserve them while at the same time allowing easy sharing and keeping track of reuse. Especially in the startup years, I was my own guinea pig. I worked with my best interests as an academic in mind. This gave us a headstart of five years over our competition.”

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But at the same time, Figshare faces a lot of criticism because of its for-profit status: “In the scientific community there is a general prejudice against commercial companies. There’s always doubt whether we will remain in business and, if we do, whether we won’t be bought by one of the big players, as happens with so many innovative startups. We can address these doubts quite convincingly, I hope. We won’t lose that many clients suddenly so that we’re driven out of business. And if we do, we’re doing something wrong and need to change the nature of what we’re offering.”

Hahnel is convinced that an advantage of being a for-profit is that it allows Figshare to be very straightforward about the services it offers, and about what customers – paying and non-paying – can expect: “In that regard, we believe we’re different from other players in the field. Our for-profit status is also very visible because we organise local events and sponsor a lot of conferences. Although the return on investment for these activities is difficult to measure it helps our people to understand the local space, to engage with our existing users, and customers and yes, it’s also a way for us to prospect the market. We often meet resistance at these events, but it’s not because we’re in business, nor that we don’t want to understand the needs of the community. Also, I have noticed that non-commercial entities, such as universities who decide to create their own data repository from scratch, are often a lot more flexible about matters such as deadlines and accountability, leading in a lot of cases to a less efficient spending of public funds. In the name of open science they claim to offer the most ethically sound service, but in the end they cost society ten times as much as the services we provide.”

Because of its headstart in the business, Hahnel believes that Figshare will be able to offer a reliable and innovative service at a competitive price: "It's even in our contracts. If we don't fit anymore we help our clients move to a new system. I don't believe in vendor lock-in and this is how we put our money where our mouth is. Despite the fact that we're not fully open source, we do provide our clients with our code base in case we do go out of business."

> "If we don't fit anymore, we help our clients move to a new system. I don't believe in vendor lock-in and this is how we put our money where our mouth is."

Hahnel is aware that that is a controversial subject: "At first sight, not being open source is not aligned with our open science principles. But we have our reasons. Not only do we want to protect our services against competition from less ethically responsible companies, we are investing a huge amount of money in staff time and technology in order to provide the best service possible to our clients.

"I don't believe open sourcing our code would save our clients a lot of money, as a do-it-yourself (DIY) adaptation of our technology will cost them more than if they just licence it from us and we sustain it centrally," says Hahnel. "We believe that providing a robust and scalable infrastructure as a service is a better use of public funds than having a localised service at every institution. It is perhaps not a popular opinion, but centralising services is a more efficient allocation of money – even if that means that some localised services cannot be continued and some jobs and positions will be on the line.

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Unlike other free data repository services, Figshare doesn't offer much flexibility when it comes to licence choice in the free service. Users can choose between CC BY and CC0.

Hahnel: "This is of course not only in line with our open science principles – I am convinced that, if you offer people the choice, they'll always be tempted to add a non-commercial clause – but it also has consequences for our business model. Offering true open datasets will allow far more opportunities for others to build on top of these datasets, keeping us relevant as a storage and sharing option."

Sometimes people want to use Figshare's technology and services in a way that is not aligned with its principles. Hahnel: "We've had requests to use our platform as a tool for private data sharing – which is not difficult to do because we offer the option to make data private. These requests come from individual researchers, projects, and research groups. Universities ask us if it's possible to integrate embargo options or to make the service available only on their campuses. We get asked to install a 'request button' feature and even if it's possible to integrate a paywall! Apart from the latter request, I don't think these questions are necessarily unreasonable, although I don't think they should be a part of our services by default."

Sometimes it is legally impossible to clear all research retroactively and make it open access (for example, old theses), so Hahnel is definitely open to adding certain layers upon request: "We tread carefully there. Adding these layers is often very complicated to implement and also I am a firm believer that technology is a powerful way to nudge people into certain behaviour. When we engage with universities using our services, we judge on a case-by-case basis. If limiting access to campus allows 50,000 people to get access to an archive of old research as opposed to no-one getting access I'd be inclined to consider it, provided, of course, that it is not applied to newly deposited research. I don't think this is contrary to our 'as open as possible, as closed as necessary' principle. We're lucky that the market has become big enough so that we don't have to engage with requests if we consider them incompatible with our principles. We can cater our services to that part of the market that explicitly wants or needs to be open."

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References and relevant links

- Figshare: **figshare.com**
- Digital Science: **digital-science.com**
- Creative Commons licence suite: **creativecommons.org**
- DataCite: **datacite.org**
- Crossref: **crossref.org**
- ORCID: **orcid.org**

About Mark Hahnel
CEO

Mark Hahnel is the CEO and founder of Figshare, which he created while completing his PhD in stem cell biology at Imperial College London.

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