

# ReportLab's DocEngine™

## Data to PDF, fast

For a decade and a half ReportLab have helped some of the world's largest companies automatically create rich PDF documents; very quickly on-demand and in high volumes. This lets us change business processes in powerful ways - cutting out postal loops, reducing business risks, driving smarter printing and letting people take away exactly the information they need from web sites. DocEngine can help build solutions for the following...

**Financial Services Industry:** monthly factsheets, Key Investor Information Documents, quarterly and annual reports, financial statements, and long documents combining text, tables and charts.

**Government Departments:** Surveys, electronic form filling, ministerial reports, digital documents.

**Education:** Study programmes, customised university prospectuses

**Online Retail:** Sales orders, invoices, statements of account, product listings, technical manuals and user guides

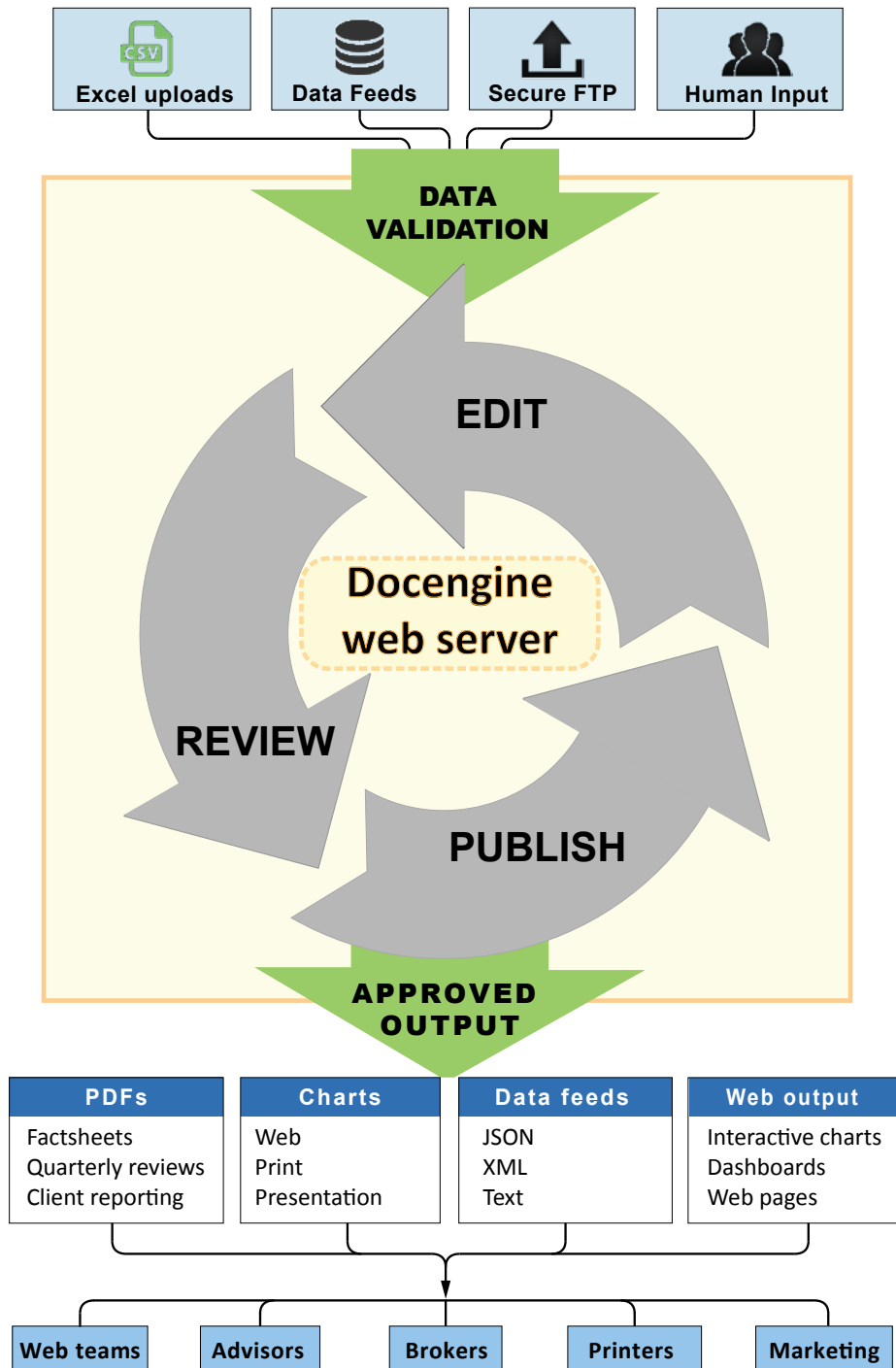
**Travel:** Booking confirmations, personalised itineraries, targeted brochures

Fund Facts					Portfolio Manager Experience and Tenure								
Fund launch date	Fund size (m. GBP)	Fund size (m fund reference currency)	Fund reference currency	Overall Morningstar Rating	Portfolio manager	1992	1995	1998	2001	2004	2007	2010	2013
01/10/04	?	2,848	EUR	★★★★	Arac Chokro								01/12/06
01/10/90	?	3,864	USD	★★★★	Adrian Brnos								01/01/08
09/05/94	?	1,423	USD	★★★★	Alex Duffy, Angel Ortiz								01/04/09
03/01/97	?	205	GBP	★★★★	Nick Peters, Ayeshka Akbar								01/05/13
01/10/90	?	1,480	USD	★★★★	Gilbert Kwiek								01/04/08
16/12/04	?	342	USD	★★★	Polly Kwan								01/10/09
07/12/11	?	99	USD	-	Nitin Bajaj								02/09/13
05/10/94	?	1,310	USD	★★★★★	Saragon Maharege, Puk Leon Yeh								01/01/12
06/12/91	?	593	AUD	★★★★★	Raymond Ma								23/02/11
15/02/11	?	1,566	USD	★★★	Jing Ning								01/11/13
18/08/03	?	2,929	USD	★★★★	Tsero Chompo ngning								21/04/08
21/04/08	?	411	USD	★★★★	Mark Buffet								01/10/12
30/01/05	?	69,675	JPY	★★★★	Nick Price								11/10/11
11/10/11	?	1,448	USD	-	Nick Price								11/04/07
11/04/07	?	955	USD	★★★★★	Nick Price								01/07/09
18/10/95	?	3,672	USD	★★★★	Alexandra Heston								01/03/07
30/09/98	?	872	EUR	★★★★	Victoire De Topoff								19/11/12
12/12/05	?	248	EUR	★★★★	Monique Sidle								01/10/10
16/09/02	?	245	EUR	★★★★	Christian von Engelbrechten								01/01/11
01/10/90	?	860	EUR	★★★★	Hilary Natoff, Nicky Skifford								14/03/12
14/03/12	?	44	USD	-	Daniel Roberts								30/01/12
30/01/12	?	5,032	USD	-	Peter Khan								09/04/13
09/04/13	?	40	USD	-	Sudipto Banerjee								01/10/10
30/10/06	?	592	USD	★★★★	Ami Ludha								02/09/09
02/09/09	?	213	USD	★									

DocEngine is our product for doing this on an enterprise scale. At its core is the ReportLab PDF Library (refined over 15 years and downloaded over a million times globally) which directly generates documents and web graphics. DocEngine surrounds this with a web application server, SQL database, and an image/asset store and other supporting packages to quickly set up common document-generation workflows:

- create personalised documents instantly.
- regenerate documents when content changes.
- manage monthly or quarterly publishing cycles with approval and sign-off.

## The DocEngine system



## Scalability and Performance

DocEngine is designed to scale to the highest levels. Some current deployments include:

- [Citrix eDocs](#) where over 5 million pages of technical manuals are regenerated every month.
- [TrueCar](#) who create over a million price-guarantee certificates per month on their web platform.
- [UCL](#), one of the world's top five universities, serve 600+ course brochures using Docengine.
- [Wikipedia](#)'s site-wide print and export feature.

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## In depth

### Input

The DocEngine platform is built using one of the most popular open source programming languages, Python. The huge ecosystem of libraries lets us quickly fetch text and figures from almost any external source. Information can be pushed in via secure file transfer and the upload of spreadsheets and other files.

### Validation

The system has been built from the ground up to understand and normalise the information it receives. Most systems fail when presented with unexpected data. However data comes into the system, it can be checked against a logical schema. With structured data (csv, queries, feeds) we check every datum against a specification. Text can be restricted and simplified to known tags; images are checked against colour and size specifications. Depending on the workflow, bad data can be flagged up for review, or quarantined while we serve the "last good version". When it is time to build a complex document, our aim is to be confident that (a) it will generate successfully, and (b) it contains correct information.

### Edit, Review and Publish

Many documents need to mix human-written content with structured business information. The DocEngine platform comes packaged with intuitive user interface components. Once the information schema is defined, we can create a modern, friendly web interface very quickly.

If required, DocEngine can implement a multi-stage signoff procedure. Documents can be kept in draft mode until all the right groups have signed off; any edit or change will reset them back; and we can keep a full audit trail of changes. For example, for a fund manager producing documents monthly, DocEngine has signoff buttons for Operations, Marketing and Compliance teams on each factsheet.

DocEngine can cut days or weeks from the traditional review cycle. PDF production is so fast that someone can edit content, click a link and see the modified document immediately.

### Output

DocEngine has the power to produce a wide array of different outputs. ReportLab's forte is complex, rich PDF documents, and data graphics for web and print. DocEngine couples this to a full-featured web framework that can easily serve pages to the public, provide downstream data feeds, and manage the distribution of output. A powerful, flexible front-end to an industry-leading generation engine.

### Security and Reliability

The DocEngine platform is already used by large financial institutions, and UK government departments. Built on ReportLab's mature server and software stack, the platform regularly undergoes independent penetration tests. When hosted by us, solutions offer redundancy between ISO-27001 data centres in different geographic locations; our solutions have historic 99.995% uptimes.

### Technology stack

Back end: Python, Django, MySQL.

Front end: jQuery, Bootstrap; custom edit-in-place & grid-editing components.

### To find out more:

View our [case studies](#) pages.

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[www.reportlab.com](http://www.reportlab.com)