



Using Superdesk to publish newspapers and magazines in print



In modern newsrooms, content is usually published online first and in print later, a so-called “digital-first” strategy.

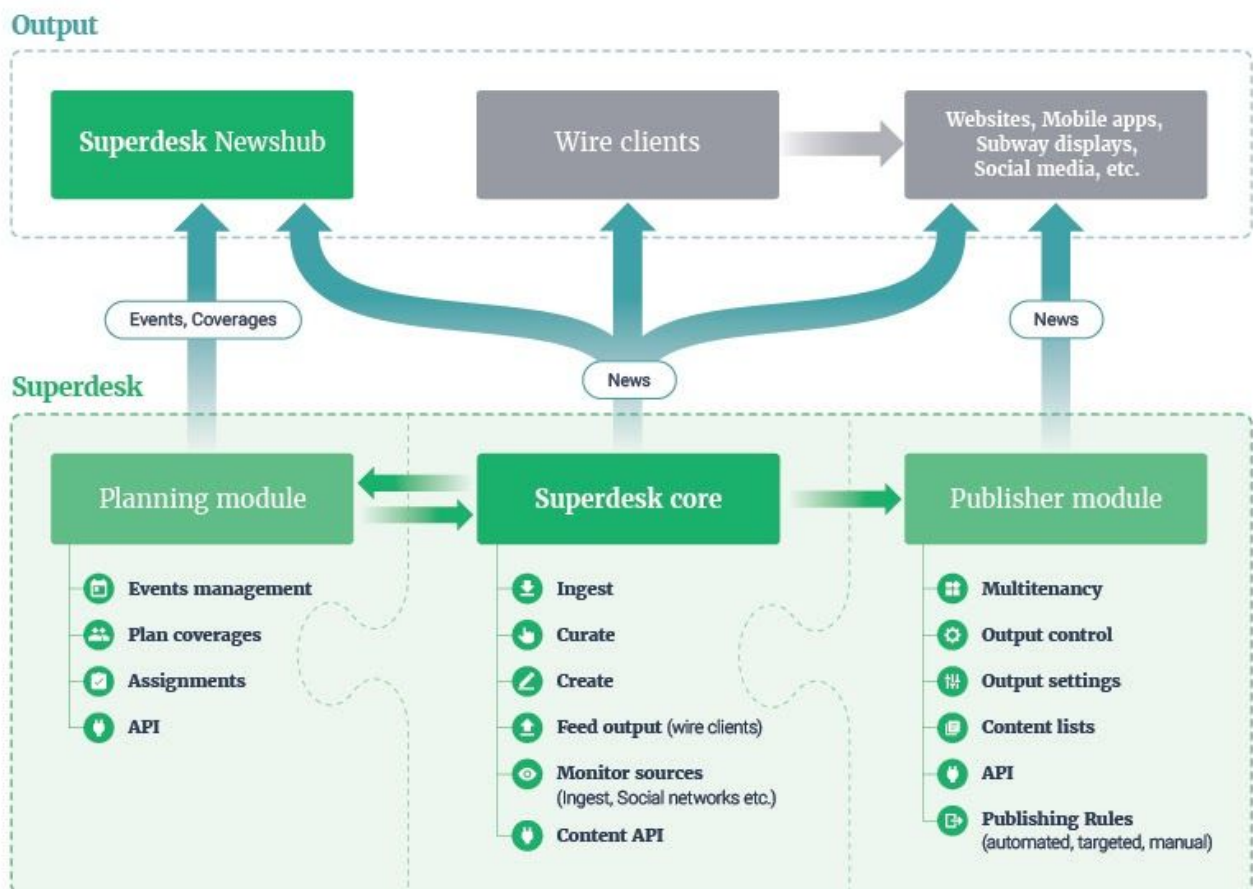
This document describes how to publish content from Superdesk specifically to print output channels, such as newspapers and magazines. It includes sections on printing advertising sections as well, including classified sections.

Note that this is only a concept paper about how a news organisation could use Superdesk for print output in theory, as all current Superdesk clients are using the system for digital or online output only.

Introduction

As a headless CMS + workflow management platform, Superdesk encompasses services, modules, and applications including:

- User management (user roles, rights, profile management)
- Single sign-on (change password)
- Publication management
- Content ingestion
- Editing
- Metadata
- Publishing
- Editorial workflow
- Reporting
- Usage history
- Asset management
- Storage (for different content types such as text, images, graphics, video etc.)
- Digital archive



Printed output in Superdesk

Publish printed content

For the most part, publishing content to a printed output is not so different from publishing online. The main prerequisites are as follows:

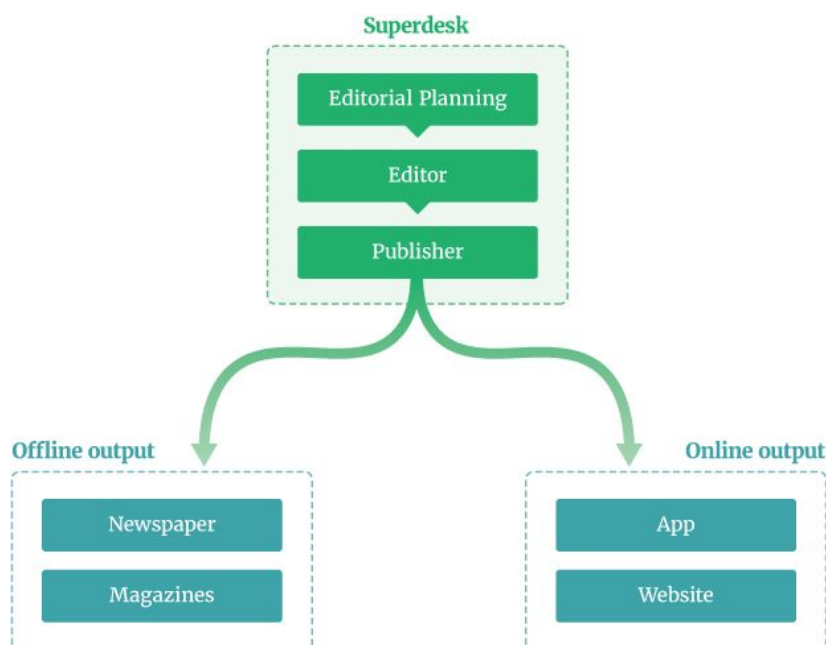
- We need to validate the content for the selected output channel. Think of copyrights for images or content types that would not work for printed articles, like movies. This should be managed in the publish flow.
- We need meta information — like publication, publication date, section etc — and communication with a layout tool.
- To create printed output we build physical pages in a layout tool such as Adobe Indesign. We set up libraries for style sheets and templates.

However, there is one big difference to online publishing. In print, we need to deal with limited, defined spaces for the articles. To fit the articles in the given shape on a page, we need information to fit copy. During production, different scenarios can arise which affect the parameters for printing, such as:

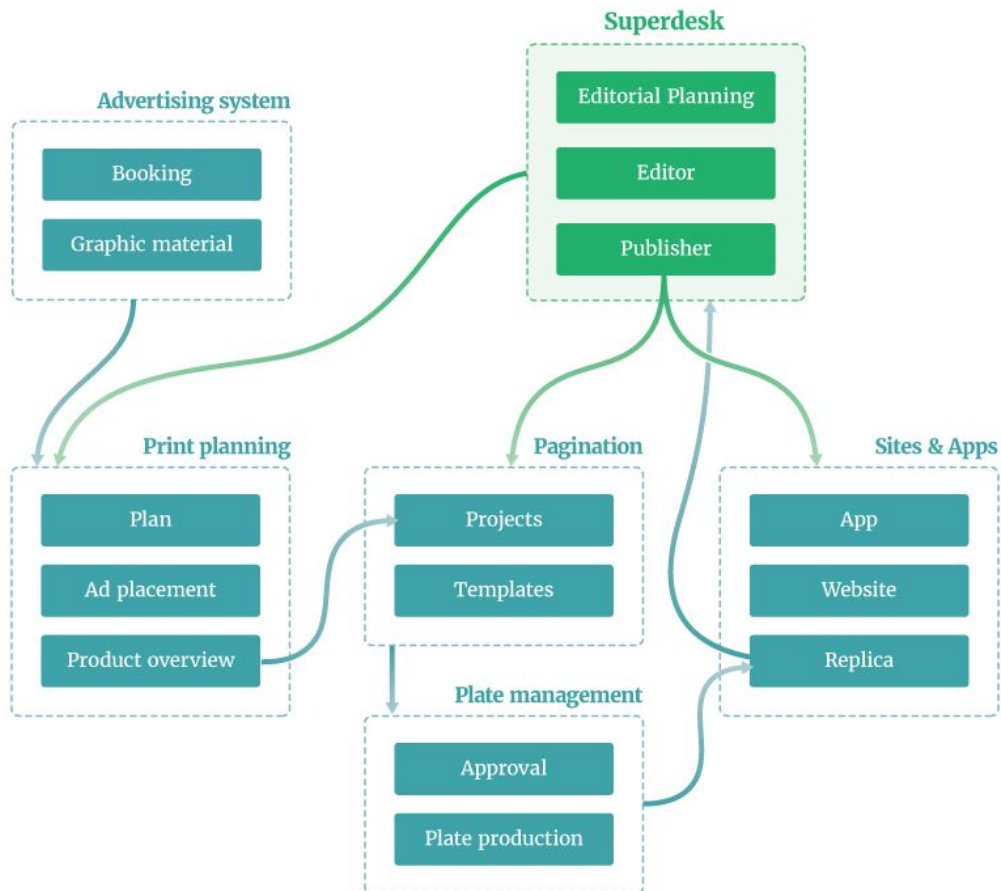
- Article content can change due to the development of the story
- Article content can change on the page while fitting the story on the page.
- Article geometry can be changed by a layout editor.
- Article geometry and/or stylesheets can change when an article moves to another section in the newspaper

It is important that the layout editor and the sub-editor work together very dynamically and that they get notifications for all these changes in order to fix potential problems.

Printed output — step by step — in an Agile, lean environment



Legacy or third-party systems



Please note: Superdesk does not currently provide all the features for a complete printflow.

This document assumes that some legacy or third-party systems are already available and being used by the newsroom aiming to implement Superdesk for print.

If the newsroom is still evaluating commercial solutions it's important that those systems support APIs, so as to integrate fully with the Superdesk platform and its extensions.

Overview of legacy or third-party systems for printflow

- Advertising system
 - Liner ads (classifieds)
 - Graphics workflow: create, receive, preflight ads
- Print planning
- Image processing
- PDF output
- PDF monitor
- Plate and press management
- Digital replica
- Digital archive

Let's look at each of these systems in turn:

Advertising system

We assume that advertising systems (including CRM, order management, analytics, invoicing, self-service, etc) are available and that information for booking, customer and ad placement are accessible via APIs.

It is important that not only information for new ads, but also changes or even cancellation of the bookings and graphics, are available (via the API). This includes:

- Ad number
- Ad size
- Publication (one or more)
- Publication date (one or more)
- Geographic zone (one or more). Sometimes the combined zones are limited to predefined combinations that can be accepted due to limitations for plate changes on the presses.
- Section (international, local, entertainment, etc)
- Physical position (page 1, page 3,)
- Logical position (e.g. front page, last page of the second book, first regional sports page, entertainment page, etc.)
- Position on the page (bottom right, bottom left, etc.)
- If the position is mandatory or if the ad on the page can be moved in the planning or editorial environment
- Ad type (In-house ad, standby ad, reservation, option)
-

While advertising systems typically provide information about customers, pricing, discount, invoicing, reporting, sales support, and so on, this is not so important in the production and planning flow.

Some systems have a self-service tool for customers who can book and upload their ad material themselves. This is also not important for print production.

Example of a commercial product: <https://www.lineup.com/>

Liner ads

Liner ads, or classified ads, have a typical workflow. They are paginated in blocks and sorted by category, with the different levels separated by headers and subheaders. This should be configurable by users.

We assume that the classified ads are paginated and available as one block (available in PDF) for the dummy/planning process.

Example of a commercial product: <https://www.lineup.com/>

Graphics workflow: create, receive and preflight ads material

Another assumption is that there is a system in place to create or receive and preflight the graphic PDF files.

The ad order intake department or preflight workflow will check the technicalities of the PDF in terms of:

- Size
- Bleed ¹

¹ Bleed: [https://en.wikipedia.org/wiki/Bleed_\(printing\)](https://en.wikipedia.org/wiki/Bleed_(printing))

- Colour space (like RGB vs CMYK)²
- Total ink coverage (e.g. no higher than 280%)

It is critical that advertising not fail to be processed in the output process flow, because this would prevent the editorial pages containing these ads being sent to the plate management system of the print plant at deadline.

If a PDF fails validation, the preflight applications should log and raise alerts. The responsible “traffickers” have to fix the problem with the customers, the advertising agencies or with the layout editors who created the files.

Once the material is OK, the status will be set as “ready to go” and the PDF will be available on a file server (or asset management system).

The status of the PDF is kept in the system, together with the booking status:

- Waiting for PDF
- PDF received
- Preflight OK
- Preflight result
 - Warnings or errors
 - Description
 - Actions taken
- History

Example of a commercial product: Integration X <https://www.integration-x.com/adproduction/>

Print planning

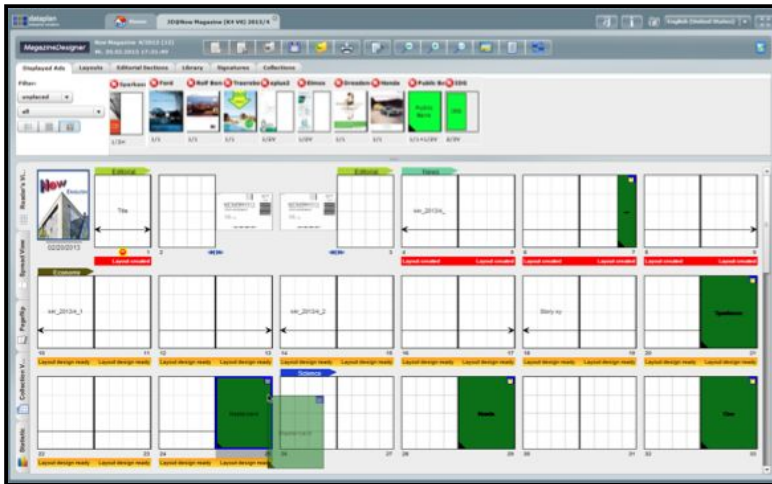
The print planning tool allows the print planner to define a printed product, including:

- Publication
- Publication date
- Book
- Geographic zone
- Section
- Physical pages
- Logical pages (a.k.a. placement codes, such as front page, first sports page, entertainment page, etc.)
- Position on the page
- Mandatory placement (Y/N)
- Material status
- Ad type (in-house ad, standby ad, etc)

² CMYK: https://en.wikipedia.org/wiki/CMYK_color_model

This information allows the planner to place the ads on the dummy according to the customer's booking.

The planner can place ads on the dummy manually or automatically. The result is a "plan" or a dummy that contains the complete structure of the publication, including all ads.



If the planner places an ad in a wrong position the system will alert the user (ad planner). He can fix the problem or override the alert.

If the PDF file for the ad is not available when making the plan, a planner should be able to put a placeholder on the page that will be replaced when the 'approved' PDF is available.

The preview of the plan and status will be updated.

The plan is the central hub in the production chain.

The planning system needs to support bleed for magazine production.

Examples of commercial products:

- Dataplan GmbH: Journal designer
- <https://www.dataplan.de/t3/index.php?id=112>
- Dataplan GmbH: Indesign Connector
- <https://www.dataplan.de/t3/index.php?id=135>

Pagination

Adobe Indesign projects can/should be created from the plan.

This process will create and store the layout project with the correct size, margins, number of columns, column width, gutter, baseline grid etc.

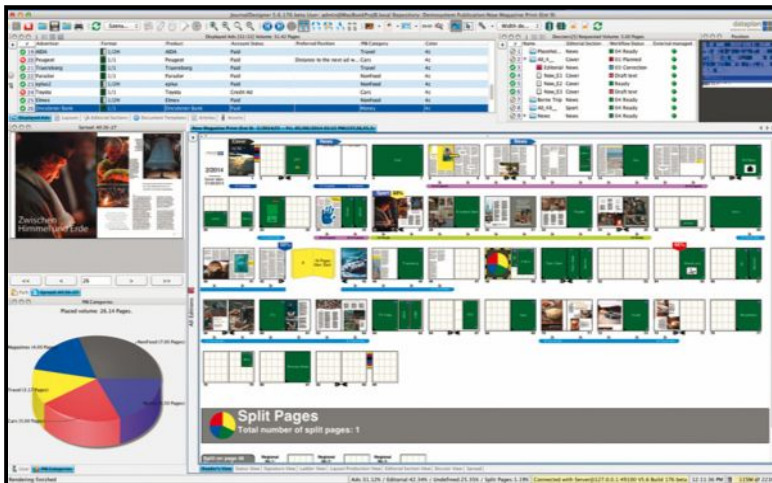
The project contains placeholders for page furniture (or header/footer) with page number, section, date line – with an appropriate style – depending on the selected template.

In a print plan, Indesign projects created earlier can be imported and moved in the plan.

When moving the project in a plan, page numbers and folio lines adapt automatically to the selected position.

The physical Adobe Indesign projects are linked to the plan. These projects can be single page or multipage.

The projects are now available for editorial production. Since the projects have a link to the plan, the preview of the projects and the production status can be updated in the plan during production.



Note that the editorial and advertising department can (and will) work together in the same plan.

We will come back to this process later in the document.

Example of a commercial product: Adobe Indesign

Image enhancement / image tuning

Images are ingested into the asset management system without pre-processing and stored in RGB, which is the right colour space for screen. When images are used in a printed publication, they need processing for:

- Conversion from RGB to CMYK
- Removal of colour cast
- Sharpness
- Colour saturation
- Dot-gain on the presses
- Maximum ink density
- Ink key values to reduce ink cost (replacing CMY (colour) with K (black))

This process can be done manually in Photoshop (using Photoshop scripts and ICC profiles). When done manually, it is very time consuming. Automated solutions help to reduce time and cost, and they can provide consistent quality, which may be more important.

Example of a commercial product: Claro <https://elpical.com/>

PDF output

Once the pagination of pages or projects is ready for publication, we need to deliver the PDF to the print facilities.

Since every single page in a project can get updated — due to news breaking during production time — we need a way to deliver multiple (time) versions of the PDF to the print facilities. Presses can be stopped and then restarted once the updated plates are in place.

Examples of commercial products:

- Switch
- Callas Software

PDF Monitoring

When a PDF is sent to the print facilities, there are different steps in the process that can fail, such as:

- PDF creation
- PDF preflight (version number not incremented, missing fonts, images not tuned, text overflow, page size incorrect, PDF name doesn't conform to expected parameters)
- Postscript errors
- Rip errors
- Plate production

Newsrooms can also send pages that never arrive at the press. When this or something else goes wrong — unfortunately, this often happens close to deadline — we need to be on top of the problem to fix it with no delay.

Therefore, we need to record every single step (with timestamps, description, and other relevant details) and raise alerts or errors when needed.

This information should be logged and available in the production overview or plan.

Plate and press management

Once the PDF is processed it is available in the plate management system.

When the “print plan” is ready (or updated), it is sent to the plate management system (in XML). The plateroom can prepare the plate and press management systems. They know exactly how the newspaper is going to be produced and they can plan the production.

Depending on the print production plan, the number of presses and the print schedule, the plate management system calculates the number of plates that need to be produced.

These systems provide a preview on the ripped TIFF files for every plate. This is the final stage for editorial staff to approve the page.

Examples of commercial products: Agfa Architex, ABB, EAE, PPI, etc

Digital replica

Generating a digital replica in an app or in a browser can be simple, using a solution like issuu.com. It can be more complex when the reader should be able to read the article in text view when clicking or tapping the article.

When the replica is built from Superdesk, we are able to add digital content types — e.g. extra photos, video, more background information, related content etc — from the platform in this new “output channel”.

Depending on the solution chosen, we need to provide (1) a plan and PDF or (2) a plan, PDF, the coordinates of every article on the page, and the enriched content.

User behaviour in this application can be used for content recommendation.



Examples of commercial products: *Twipe, VisioLink*

Digital archive

A digital archive for printed content (PDF, cropped images, etc.) should be available in Superdesk.

Story components

In Superdesk, the various elements of a news story are flexible. We can also define as many content fields as we like, for example:

- Supertitle
- Headline
- Subtitle
- News intro
- Intro
- Location
- Author(s)
- Body
- Intertitles
- Image(s)
 - Byline(s)
 - Credit
- Graphic(s)
 - Byline(s)
 - Credit
- Quote(s)

Story types

- Main story
- Photo article
- Normal article
- Chapeau
- News briefs
- Opinion

- Analysis
- Factbox
- Sports (with results, yellow and red cards, etc)

Superdesk supports any type of content structure or story type. Every type can have a specific purpose or structure. This can be interesting and useful for formatting printed content.

Metadata

Editorial notes, memos and other metadata can be very useful to display and use in the pagination.

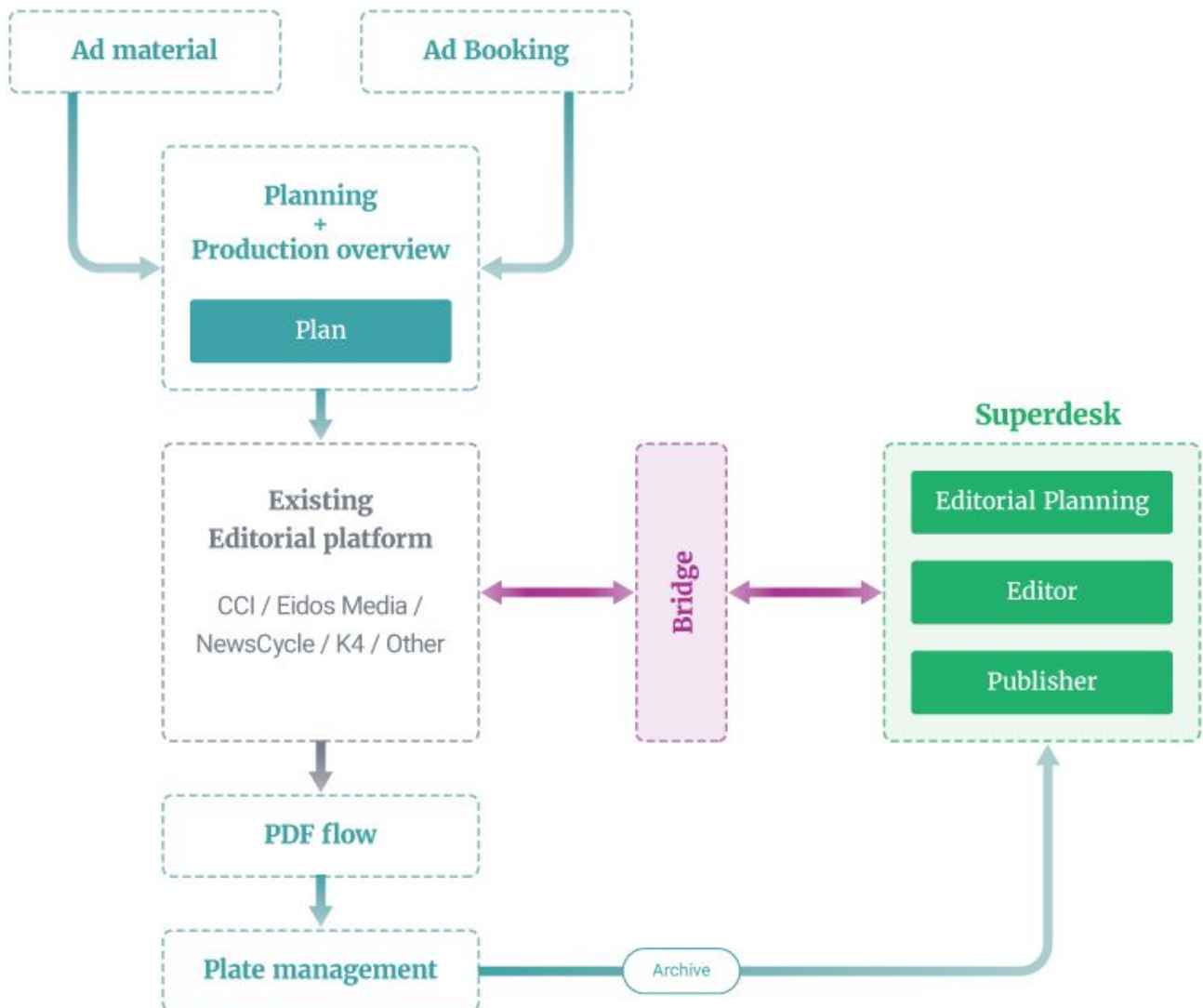
Appendix:

Potential approaches for a Superdesk print plugin MVP

1. Link between Superdesk and an 'existing' and operational editorial system
2. Loose coupling between Superdesk via a file server
3. One-way API link between Superdesk and Indesign
4. Two-way API link between Superdesk and Indesign
5. Save geometry information with the article in Superdesk
6. Automate layout tasks via the Indesign server
7. Select an article shape from a production page and write to fit in Superdesk
8. Select an article template from a library and write to fit in Superdesk
9. Working with a grid on the page
10. Update the article in Superdesk with new components added on the page

These approaches are described in detail below, along with their respective advantages and drawbacks. Note that implementing one or several of the scenarios listed under points 1-4 would be required in order to proceed with steps 5-10.

1. Link between Superdesk and an existing editorial system



Step by step

- In this first scenario, we make the assumption that advertising, page planning and layout tools and production monitoring systems are available in an existing editorial environment for printed publications
- Depending on the (open) architecture for the existing editorial platform, it could be possible to send stories - articles, images and metadata - back and forth between the two environments
- The "bridge" - including all the logic required - has to be developed
- The stories are created and sub-edited in Superdesk, based on the agreed length of the story (number of characters, words, lines, etc)
- When the article is 100% ready for publication, it is published in Superdesk with all the properties needed to send it over to the existing editorial platform
- When the API is available, it could be possible to send the 'print' article back to Superdesk as the most recent version

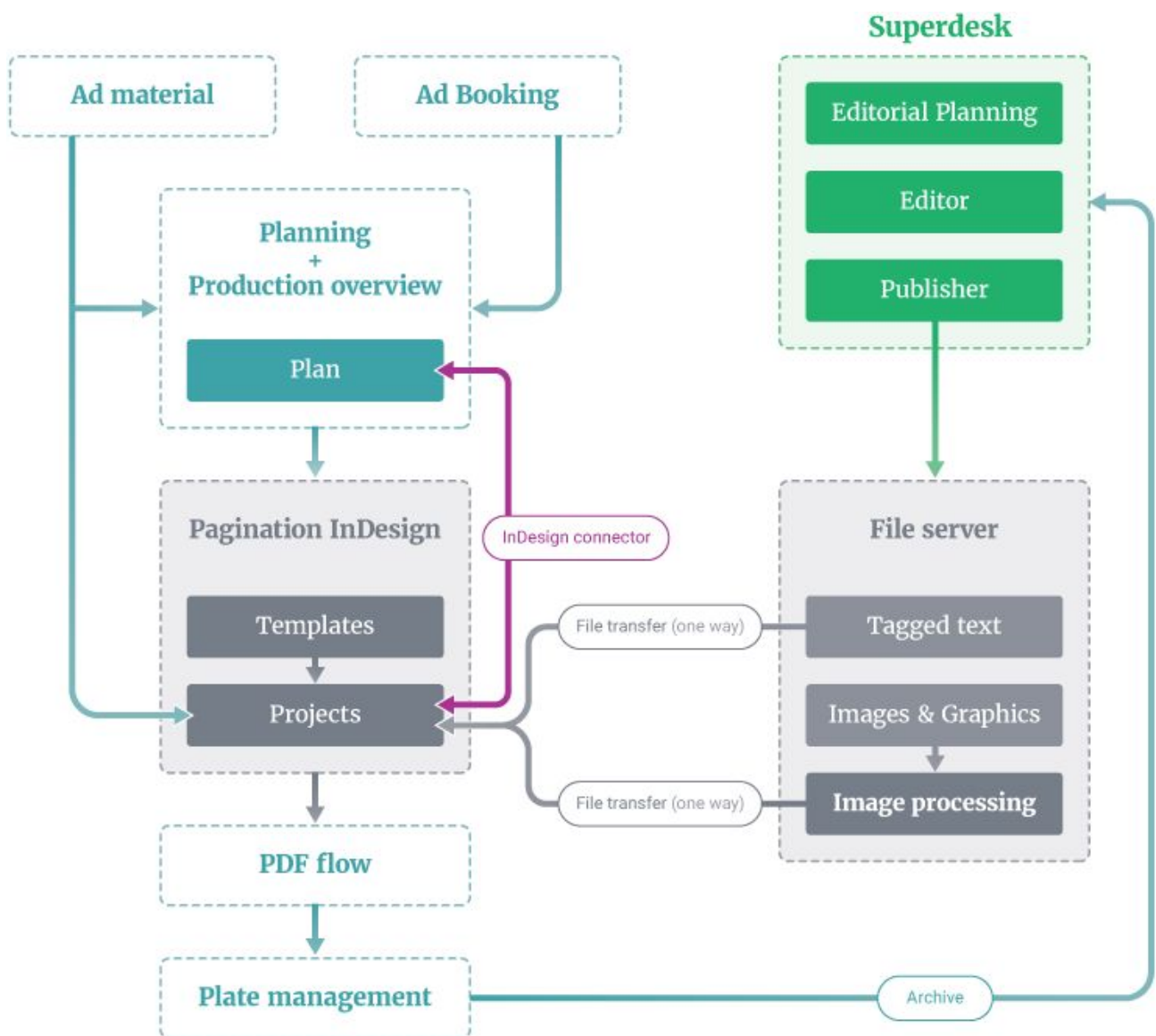
Pros

- Licences and support fees for editors no longer needed in existing editorial environment (they work only in the Superdesk editor)
- Reuse of an existing platform = minimal change for the layout department
- Stories will never fit in the given space without doing technical sub-editing in the page

Cons

- Maintenance for two editorial environments, users, user rights and roles, publications, sections, statuses
- Setting up and maintaining bridge functionality and validations between two different environments. Think of adding a section, users, groups
- Write-to-fit functionality and article or page previews in Superdesk are probably hard to develop ...
- There is a risk that editors will continue to write stories in the existing environment; because they are used to it, or because it is quicker to make it fit in the page

2. Loose coupling with Superdesk: content pushed to a file server



Step by step

- Pages will be created from the production plan
- When creating the page, it is optional to select a pre-designed page template from a library, containing the correct size, columns, margins, stylesheets, print styles, etc.
- Templates are maintained by the layout department
- It might be that there are conflicts with overlapping ads and article shapes. These conflicts need to be solved by the layout editor
- Creative pages can also be created manually or based on an empty template containing article geometry, style sheets, print styles, etc.
- These pages are checked in (or linked) to the print plan
- The plan shows the (linked) page in production - while under construction - via the Indesign connector
- The page layout is ready for editorial production

- When an article is published in Superdesk, (Indesign-tagged) text is exported to a file server in the appropriate folder structure (per publication, publication date, section). The folder and subfolder structure on the server can be created dynamically from the publishing process. The Indesign-tagged text contains a reference to generic stylesheets that will set the text components in a predefined style in Indesign. These styles can be altered on the page with the styles needed for the article type. It is recommended not to make the folder structure tree too deep, so as to avoid a lot of clicking.
- When an article is published in Superdesk, raw images are exported to a folder structure on the file server.
- Browsing the folder structure (per publication, pub date, section) on the server can be easier using Javascript functionality (in a custom palette) in Indesign.
- Image enhancement can be done in a folder-based workflow.
- Text and images are imported into the page from the folder structure on the file server.
- When the layout is ready, creating a PDF – with the appropriate print style – and dropping it in the PDF workflow is done using Javascript functionality in Indesign. The script should take care of versioning for newer versions of the PDF that need to be delivered to the print facility.
- Deletion of deprecated data on the file server is done via housekeeping scripts.

Information about markup for InDesign is available on:

- https://help.adobe.com/en_US/indesign/cs/taggedtext/indesign_cs5_taggedtext.pdf
- <http://www.images.adobe.com/content/dam/acom/en/devnet/indesign/sdk/cs6/idml/idml-cookbook.pdf>

Pros

- Very simple set-up
- Updated previews in the plan view

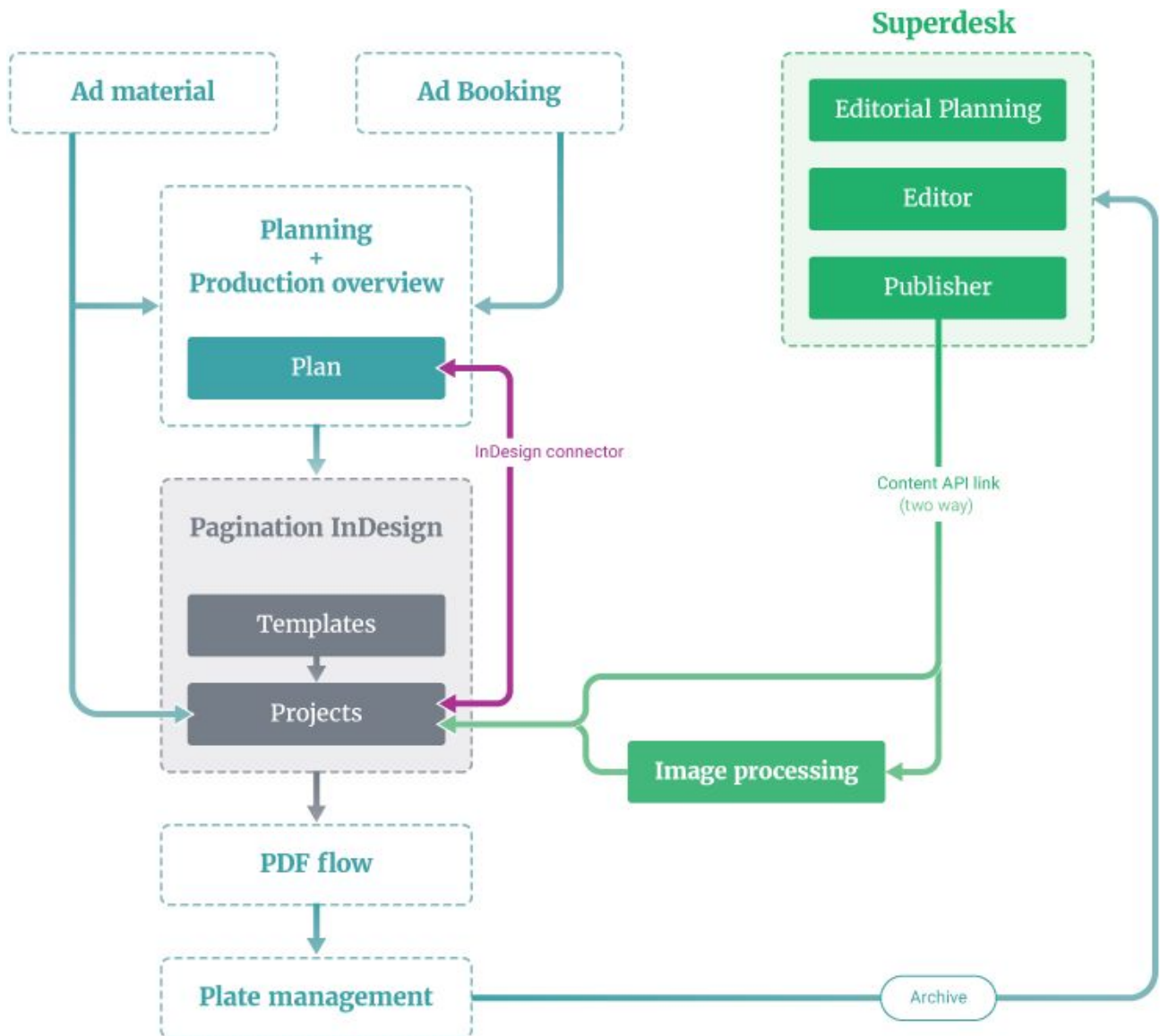
Cons

- One-way flow from Superdesk to the page design, no feedback to Superdesk
- Content changes on the page are not stored in Superdesk
- No production status is available for editorial and print in the plan
- Image processing on raw images is less accurate, using the crop info allows the system to better analyse the cropped area of an image. Think of white point, black point, etc.

Concerns

- Tables are delivered as tab-delimited data within the article text
- Bylines and credits for the images come from Superdesk as components in the text file. Layout editors need to find and place the correct byline with the right images. This can be error-prone.

3. One-way API link between Superdesk and Indesign



Steps

- The preparation of layout pages is similar to the previous scenario. For all the next scenarios, we assume empty pages or predesigned pages with advertising are available
- A plugin in from Adobe Indesign allows the layout editor to connect the layout to Superdesk to select and place text, images and graphics from Superdesk
- The plugin will provide a custom user palette with specific features to do the communication with Superdesk:
 - layout editor should be able to do queries to retrieve articles that need to be published on a given page
 - layout editor should see in the palette the list of articles (and optionally drill down to the article components: head, intro, body, etc) together with the metadata coming from Superdesk when the article was published for print (publication, pubdate, section, page and whatever is available and useful)

- The layout editor should be able to get the text directly from Superdesk, in this scenario the article will not be exported to a file server. This minimises the risk of using the wrong article on a page, or importing an article twice from the server
- In this case a copy of the article is imported into text boxes in the Indesign document (There is no need for an intermediate file!)
- It is a good idea to get the text from Superdesk over an API in HTTP
- For inspiration: a bi-directional HTTP link to different DAM systems (for images) is built by Silicon Publishing (www.siliconpublishing.com)

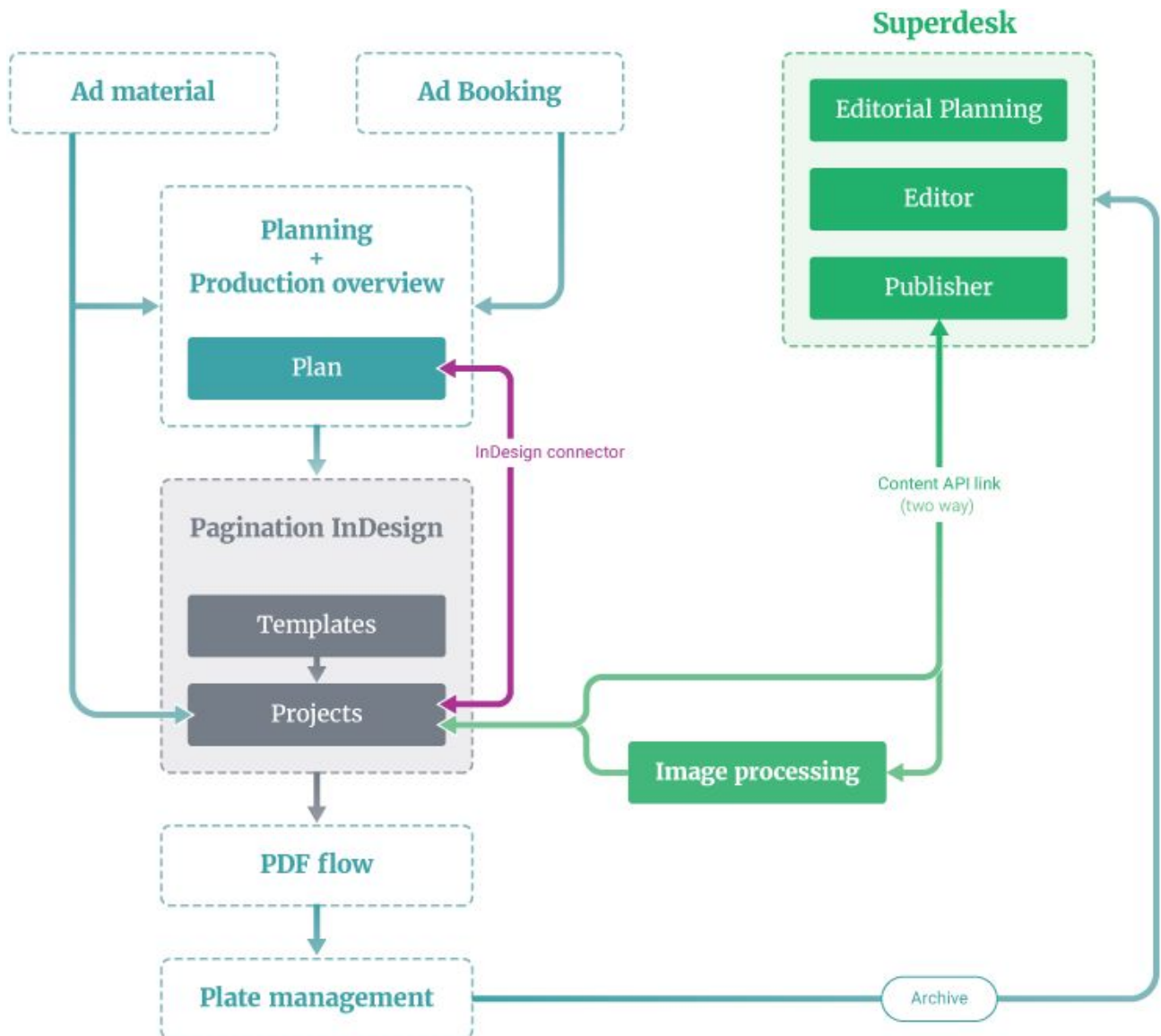
Pros

- No need to export articles to a file server
- No need to do housekeeping on the file server
- Easy query and retrieval of articles from Superdesk

Cons

- Changes made in the article on the Indesign pages - eg. to make an article fit into a given shape - are not saved back in Superdesk
- In this workflow, a sub-editor who has approved an article in Superdesk before publishing needs to do an extra review and approval on the pages
- This can have an impact on the editorial organisation and the cost for extra Indesign licences and support
- Rigid notifications and workflow. When an article is updated in Superdesk, the layout editor needs to be notified to retrieve and update the latest version of the article on the page

4. Two-way API link between Superdesk and Indesign



Step by step

- This scenario is similar to the previous one, but the changes on the page will be saved back in Superdesk via the APIs
- A layout editor can change the article on the page for different reasons, per example:
 - adding an image - that was not in the original published Superdesk article - with byline and credit needing to be added to the original Superdesk article
 - adding a quote in the article on the page will add the quote in Superdesk
 - adding or deleting text for the purpose of copyfitting will update the Superdesk article
- Indesign can be seen as "just another editor" application for the articles

Pros

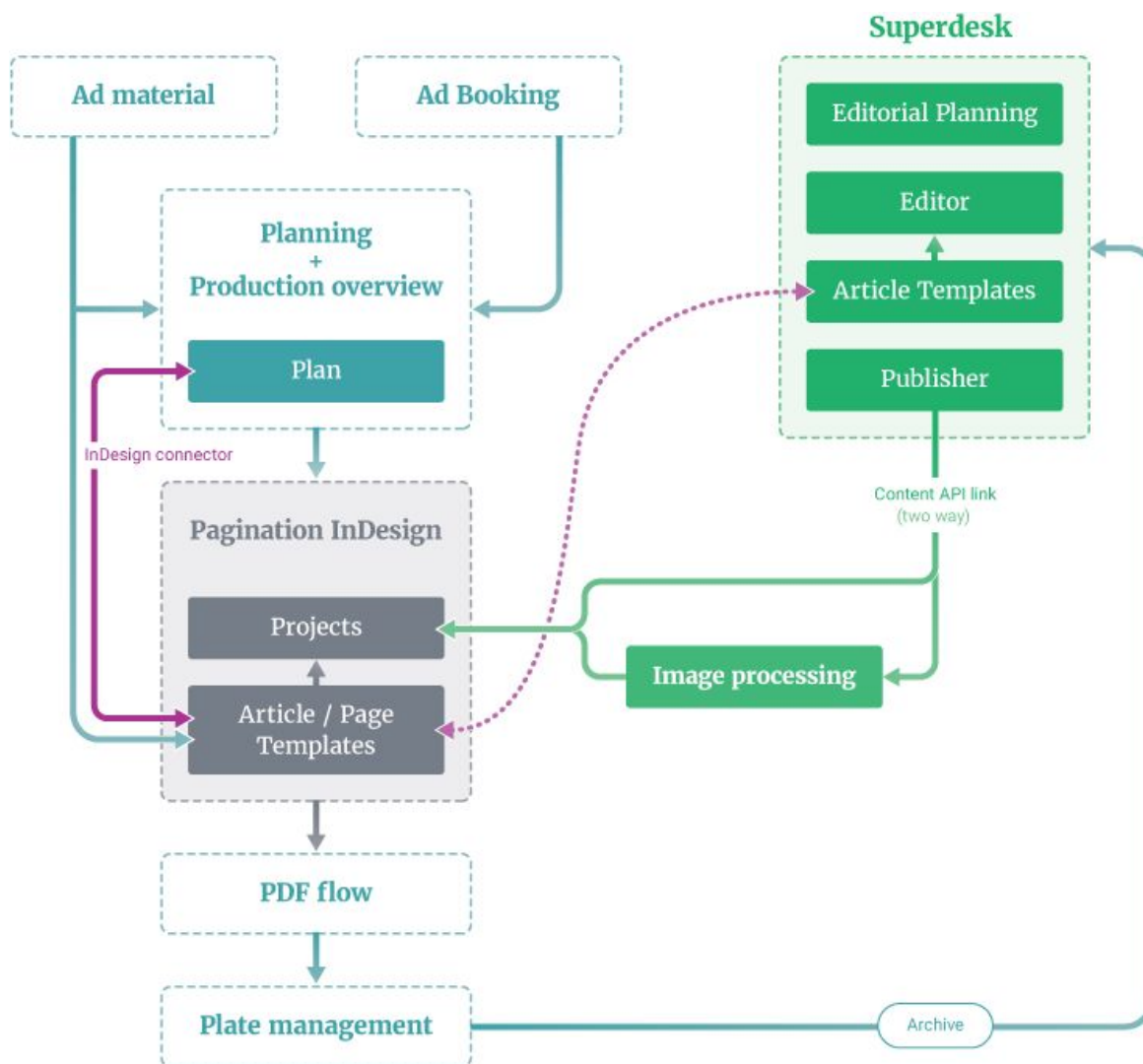
- Superdesk platform is the single source of truth/content
- All published content is always up to date in Superdesk and derived products like a replica app on a tablet or a web version of the newspaper in the browser can be created as another output channel from Superdesk. There is no need to deconstruct pages for the replica app.
- The replica app can contain extra images of movies, coming from Superdesk when needed.
- Editorial workflows between editors, sub-editors and layout editors can be optimised

Cons

- It can be difficult to store all creative layout changes in Superdesk

5. Save geometry information with the article in Superdesk

Save the geometry of the article to extract an article preview from the page



Step by step

- This scenario builds further on scenario 4
- When the article is placed on a page and formatted with the correct styles, it can be previewed in Superdesk
- Since the coordinates of every text and image box containing the article are known, we could show the preview of the article (optionally separated per textbox or imagebox) in the Superdesk editor application

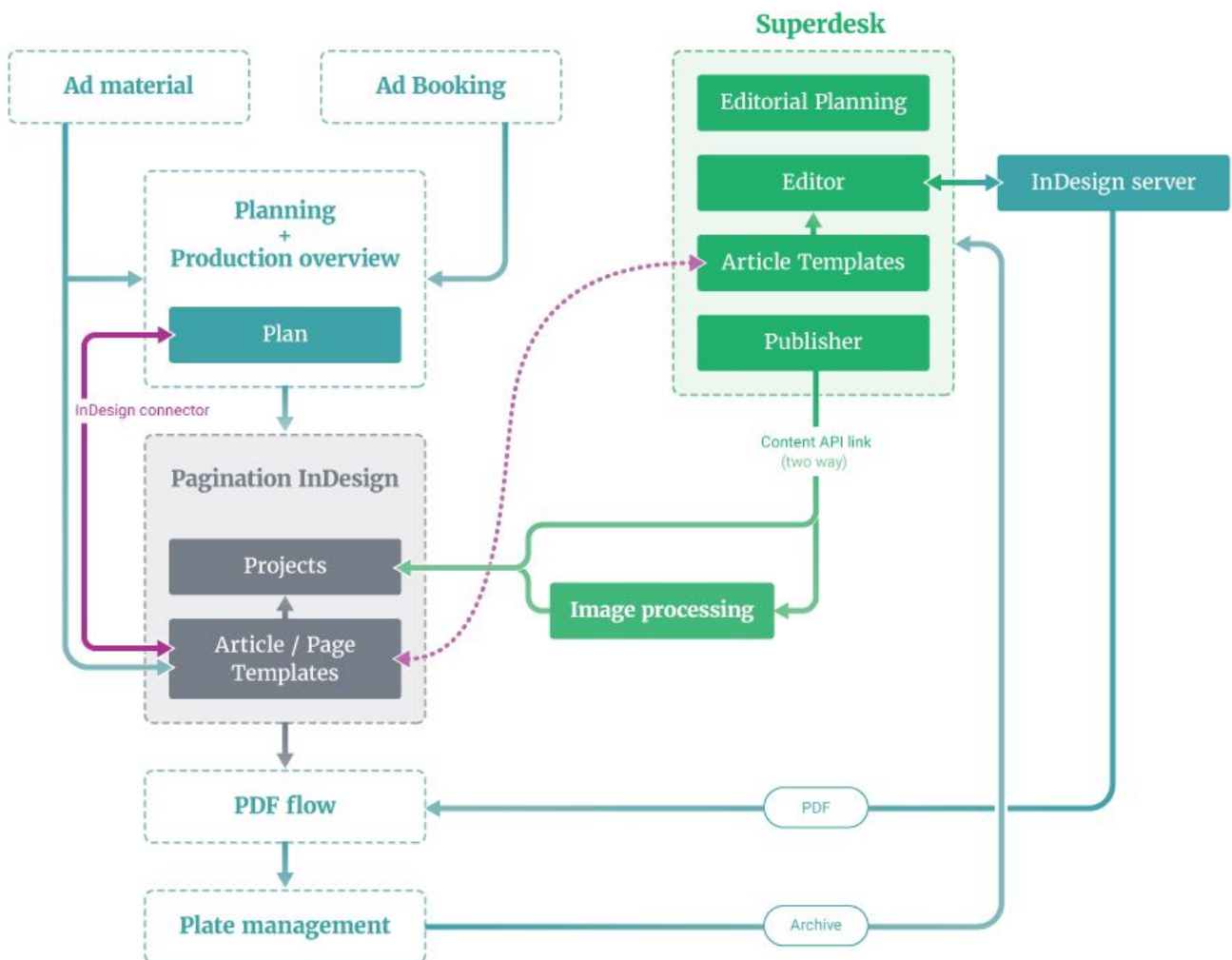
Pros

- Editors or sub-editors can see how the article is on the page without an Indesign licence

Cons

- Having the preview does not help the editorial staff to write the article to fit on the page

6. Automate layout tasks via the Indesign server



Step by step

- Building further on previous scenarios
- We introduce the Indesign server to automate layout tasks based on the metadata of an article or a page.
- Some examples:
 - Creating PDF
 - When a page is ready for print: PDF can be created automatically, based on a page status set in the custom output palette. Setting a layout in a status 'ready for print' triggers the pdf creation and printflow
 - Before creating the PDF, we can check and validate parameters such as:
 - Advertising statuses: should be 'accepted' or 'preflight OK'
 - Text overflow: no text box should have text overflow
 - Image quality or colour space: every image should have passed image improvement process
 - Document size should comply with plate and press configuration
 - Bleed
 - It is recommended to be able to override failed quality checks. It might be more important to deliver a - lower quality - PDF when the presses need to run to meet deadlines

- Create pages from the production plan
 - Create pages from the production plan
 - Place late ads material automatically in the right placeholder on the page
 - Update the production plan when the layout editor moves or removes an ad on the page

Pros

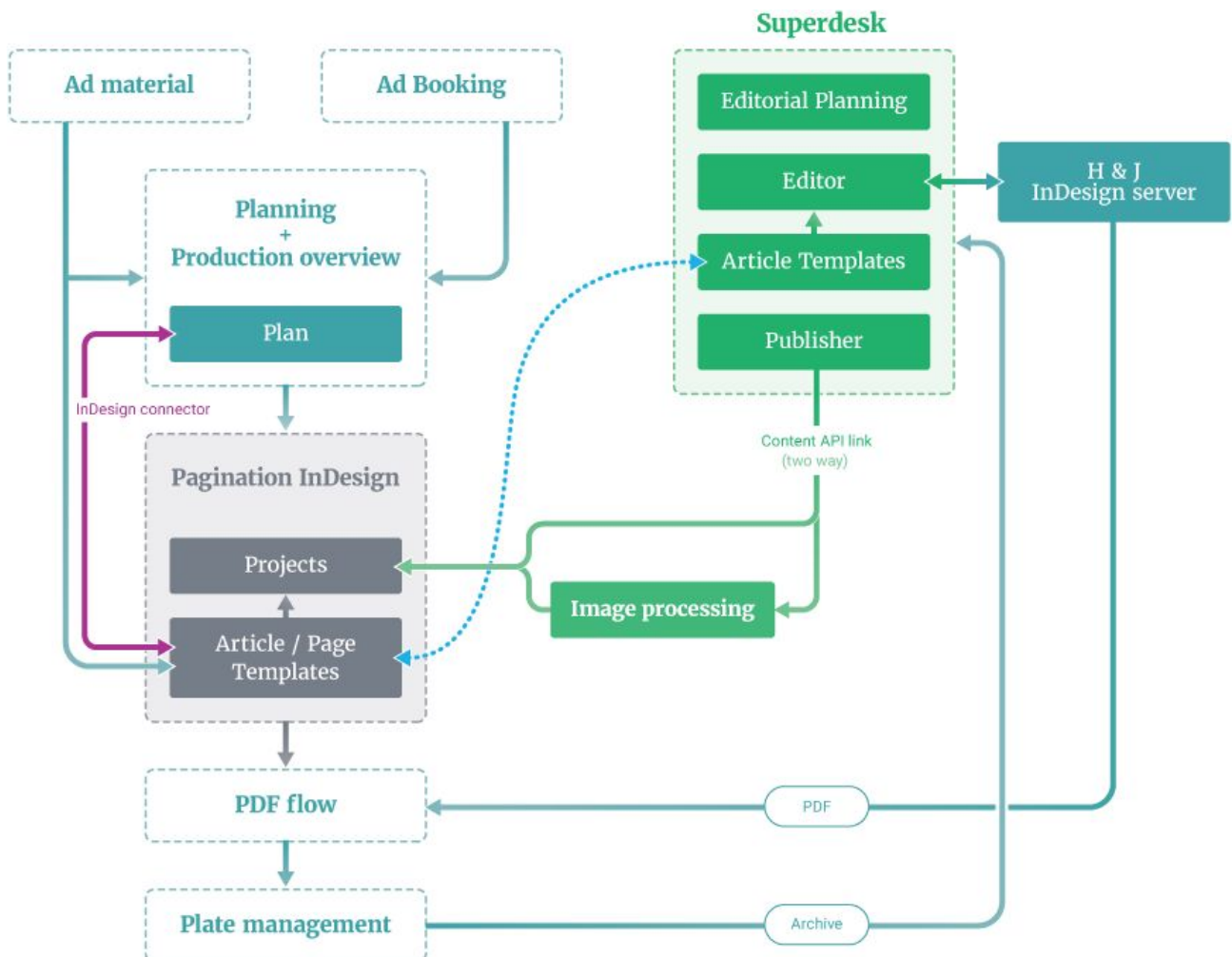
- Automating returning layout task via a headless server can reduce the number of errors significantly
- These tasks can run asynchronously and will not hinder the manual process
- In case of problems, these automated tasks can always be performed manually

Cons

- No disadvantages when automating a repeating task triggered by status or events

7. Select an article shape from a production page

Select an article shape from a production page and write to fit in Superdesk.



Step by step

- Indesign servers are installed and the layout geometry of the article is available, as in the previous scenarios.
- The layout editor creates a link between the (empty or early version) article and the layouts.
- When the editor or sub-editor is writing the article, she can see the text flowing into the layout, via a round-trip to the Indesign server.
- Indesign server will apply the styles from the geometry to the article and return if the article is too short, too long or when it fits the designated shape, without having to disturb the layout editor
- When the volumes are high we can install Indesign servers in a "load-balanced" cluster.

Pros

- Editors and sub-editors will be able to write their article to fit
- This will increase layout productivity, since the sub-editing process can be done in the editor itself

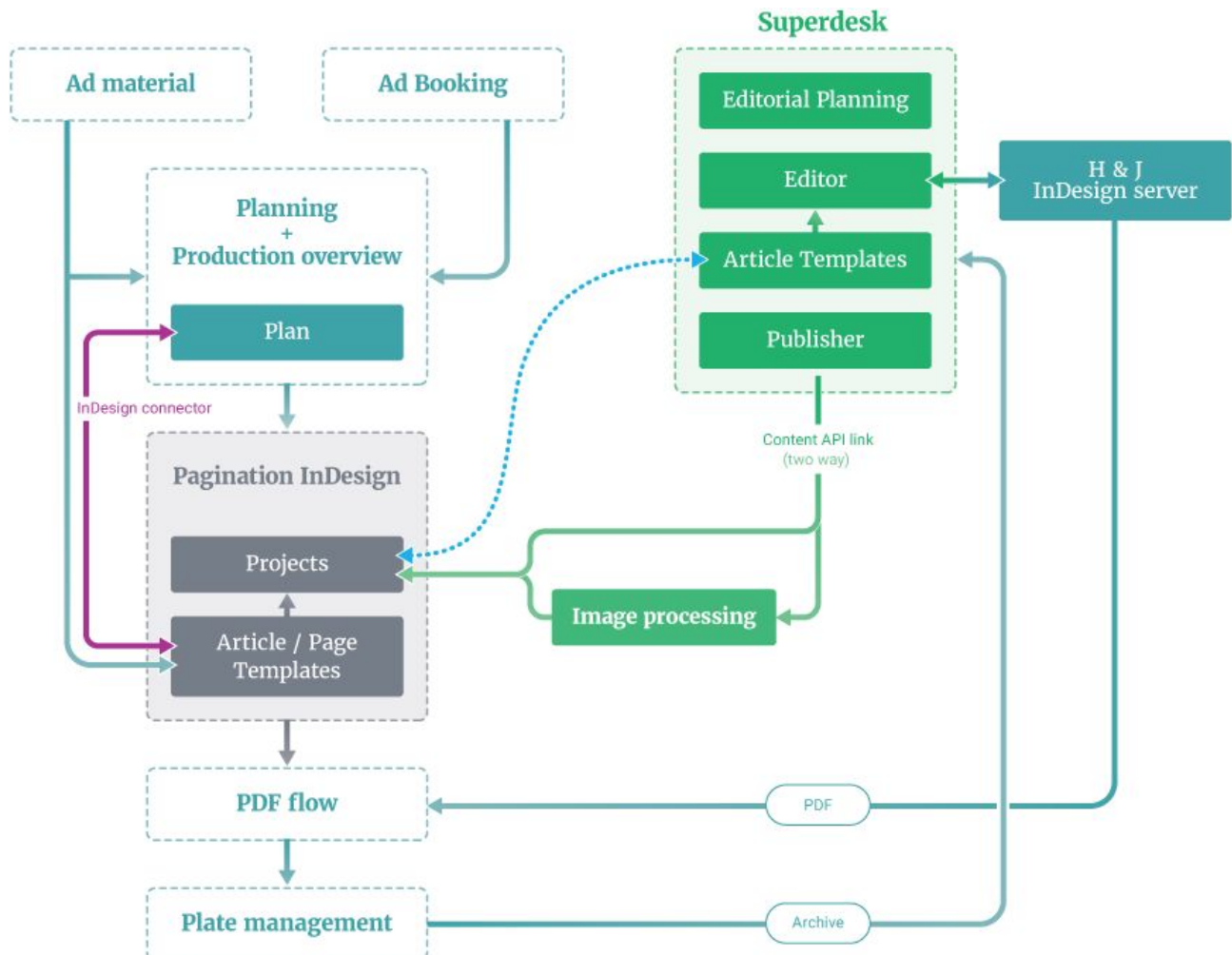
- When a laid-out article is removed from a page, it can easily be recovered and added to another page with a drag-and-drop action, since all the layout information is still available in the article, so it contains all the information required
- The scenario works with irregular shapes, text runaround, cutouts and all regular Indesign functionality

Cons

- Development could potentially be complicated

8. Select an article template from a library and write to fit in Superdesk

In this scenario we will add functionality to create content that fits in a predefined shape.



Step by step

- This scenario is very similar to the previous
- The difference is that an editor does not select a shape from a production page but from an article template library
- This is often used for special articles like columns or opinions

Pros

- The editor can create a laid-out article even before a layout editor has provided a shape from the page
- The layout editor can place the article on the page with one drag and drop
- Drag and drop will draw the article to the page, since it contains all the information that is required

Cons

- This scenario is useful to increase productivity, but it might decrease creativity

9. Working with a grid on the page

We assume that all pages are built on a fixed grid (e.g. 6 columns by 8 rows).

The ad sizes can be defined to fit exactly on this grid.

When the editor has access to a library of prepared article templates or article shapes that also fit on this grid system, it is possible to create an article in a selected layout template without knowing where the article will be placed in the final publication.

The article template library can contain different article shapes for the different modules that fit on the grid (eg 1x1, 1x2, 2x1, 2x2, 2x3, and so on up to 6x8).

Here is an example for different article templates of one size, 2x3. Please note that you can prepare as many templates you need.



There are no limits.

This workflow is very useful for straight (templated) pages, that have to be produced efficiently at minimal cost and little layout effort. Think of regional news pages.

De Persgroep has implemented this concept successfully for weekly advertising newspapers.

29 / 31

10. Update the article in Superdesk with new components added on the page

Last but not least, one would like to add content - last minute - to the page to improve the layout, without returning to the Superdesk editor. Think of pull-quotes or extra images.

Step by step

- Extra article components such as quotes, images, image bylines and credits created or added to the page layout are saved back to the article in Superdesk
- This makes Superdesk the single point of truth and makes it simple for the newsroom to share and reuse validated and published content on other output channels

Pros

- Published content is available in Superdesk for sharing or easy reuse in other channels

Cons

- We may encounter a lot of special cases, including the following:

Special cases to think about

- Tables
- Lists
- Text replaced by graphic



- Timelines



- Feature pages



- TV pages, sports result pages
 - The content for these pages is probably not created and managed in Superdesk
 - The pages can be delivered by third parties or they can be produced in a separate system. This production is not in scope for this document.