

The building blocks of a reader revenue tech stack

HOW DATA, TECH AND KPI'S HELP TO FUEL DIGITAL SUBSCRIPTIONS

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IMPRINT

THE BUILDING BLOCKS OF A READER REVENUE TECH STACK

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COVID-19's disastrous impact on advertising revenues has forced news publishers around the world to put an even greater emphasis on the revenues they generate from their readers.

Indeed, the publishers who are proving to be the most resilient as the coronavirus pandemic lumbers on are largely those who had already shifted their business models to ones that prioritised reader revenues over advertising revenues. Now, more than ever, having a strong reader revenue stream is becoming vital for survival for news publishers.

What we have learned from our members and other exchanges is that many publishers are at different stages and trajectories with their reader revenue strategies. And many, particularly those starting out, have questions about the tech associated with reader revenue. But even the most advanced at this confess to the complex nature of it all.

We can't help but recall a conversation with an unnamed publisher subscription specialist who responded like this when asked if they could provide a schematic of their reader rev tech stack and workflow: "(laughs... then) I don't think you want to see that puzzle and it's probably already outdated!" And that is from a quite successful reader revenue example.

Our previous report on this topic, "Engaged readers don't churn – retention lessons for digital subscriptions" (August 2018), largely focussed on efforts publishers were undertaking to gain and retain digital subscribers.

A look under the hood

With this report, we take a look under the hood, so to speak, at the array of internal logistical and strategic issues that news publishers need to address within their infrastructure to make their reader revenue ecosystem function as effectively and seamlessly as possible – for both their staff and the readers they want to convert into paying subscribers.

So it would be fair to say that we preface this report with this, something we heard from many publishers and experts working on this issue: There is no one RIGHT way to set up data and technology for an audiences-first publisher. And if you read in this report, "you should" do this or that, that advisory tone is coming from the many publishers we spoke with.

A thorny, messy challenge

Nick Tjaardstra, Executive Director for WAN-IFRA's Digital Revenue Network, has spent most of his time during the past few years focussed on publishers' reader revenue strategies. He has had a front-seat view of publishers' journeys, challenges, successes and failures.

"Data architecture is probably the most thorny and resolutely unsexy challenge in publishing right now," he says. "The more you look at it the messier and more expensive it becomes. The result is that people 'make do' – patching up legacy systems or buying tools to perform specific tasks such as marketing automation or a new paywall frontend. Systems often do not talk to each other, or only through messy one-way integrations or manual imports.

"This was fine when print was still providing the bulk of revenue, but post-COVID, digital subscriptions are

suddenly the prime driver of growth. If you have no idea what your subscribers are reading, simply because the systems are not in place, then it's going to be very difficult to retain those readers going forward.

"Where once the CRM simply managed the customer database of subscriber information, it now needs to communicate with the CMS or entitlements system.

"Another problem is that everybody works in a different way – either missing the data they need or measuring it in a completely different way. That struck me most when I tried to organise a small benchmarking group of leading European publishers. One measure was the average percentage monthly churn with digital subscribers after 100 days. It sounds simple, designed to strip out any effects of marketing offers like the classic first month free. But do the backend systems allow you to collect this data? Is it relevant if you can only persuade people in the first 30 day window? Does this include ePaper? How much do the subscriptions cost anyhow and are we comparing like with like? Are we counting subscribers on other long term offers?

"It's a minefield.

"I've heard similar stories from other informal publisher benchmarking groups. Sometimes the most useful data comes from big suppliers like Piano or Adeprimo, where they have a large enough base of customers using the same metrics.

"One large German publishing group I spoke to recently had a clever approach to the problem of data and multiple systems. They asked the newsroom, sales, marketing and digital teams for 10 metric questions – the performance measures they really wanted to know. Then they started the clock to see how long it took to get the answers with their current systems architecture.

"I encourage readers of this report to do the same!"

In case you missed it...

WAN-IFRA published this report on retention strategies nearly two years ago, and it is still very relevant today, especially when you consider how many digital subscriptions publishers acquired during the pandemic.



Now comes the hard work of keeping them on board. Retaining existing customers is a great deal less costly than constantly acquiring new ones. And it's a top priority for a lot of publishers with a relatively mature digital subscription business.

WAN-IFRA members can download the report for free, and non-members can purchase it:

www.wan-ifra.org/churn_report



Executive Summary

Here are some of the issues where the publishers and experts we spoke with seemed to reach common ground.

- **Template for a tech stack?** There is no single right way to implement a technology and data strategy associated with a publisher's reader revenue strategy, but a common thread that publishers told us...
- **Start with your data, then the tech:** Clean, easily accessible and actionable first-party data can serve as a backbone of any digital subscription strategy. The scope and objectives of a data strategy may vary, but whatever strategy is adopted, it should form the basis of all subsequent tech stack decisions.
- **Seamless integration:** It is not so much about which technologies or tools you use, or even how you implement them... it's more about how your technologies are talking to each other seamlessly, i.e. integrated.
- **Asking the right questions:** That means if / when you are investing in new systems, be sure the APIs are there and clear to pave the way so your data flows seamlessly between systems, and critically, from editorial to marketing to commercial to the entire chain of a digital subscription journey.
- **Make it easy on your journalists:** If the above is achieved, it implies that your journalists have easy-to-understand tools and dashboards (and KPIs... more on that in a minute) to drive engagement, conversion and loyalty.
- **Common KPIs:** As Tor Jacobsen of Schibsted tells on the next pages: "The great thing with digital subscriptions is that success is easy to measure. The KPIs are really the same for the editorial team, the marketing team and the team working with data analytics. [...] it's the perfect way of combining the KPIs for all internal teams. And to make that happen, you don't necessarily need to build a system, it's more about having some key KPIs to follow."
- **Regarding first-party data,** the publishers we spoke with broadly divided it into three categories: interactions, content, and consumers. The key to understanding an audience is to work out how the three are linked.
- **Building your own vs. buying or partnering:** Whether it is purchasing a data warehousing solution or building your own data layer platform or even your own analytics, for example, there are clear upsides and downsides to each. It mostly depends on your in-house skillsets, long-term strategy, and, naturally, budget. But what is clear is you should have...
- **Tech, data and product 'experts'** should be embedded in the newsroom and the entire chain to remain agile and to ensure that the right people have the right data at their fingertips to drive their KPIs.
- **Common comms across systems:** One of the most technically challenging aspects of driving digital subscriptions is getting customer journeys, promotions, marketing messaging and other customer communications aligned across systems as well as across platforms.
- **Test, test, test:** That is the cultural side of the equation, to start somewhere and create a continuous feedback loop. "You will never find the perfect solution for everyone, but you can perfect your solution over time."

KEY TAKEAWAYS:
WORLD MEDIA LEADERS E-SUMMIT

PUBLISHERS' RESPONSE TO 9 STRATEGIC CHALLENGES POST-PANDEMIC

WAN-IFRA



PRINT PRODUCTION DURING COVID-19

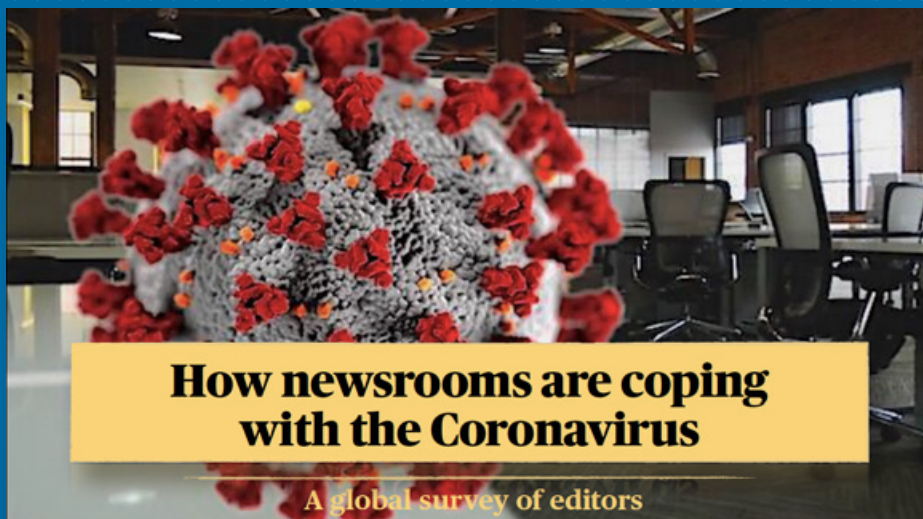
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How newsrooms are coping with the Coronavirus

A global survey of editors



Overview

‘Getting your data in order’

One bright spot that has emerged from the findings of various studies during the past year, and which has even accelerated since the start of the COVID-19 pandemic, is that more and more people are becoming paid digital subscribers.

As we were finishing this report, an article published by What’s New in Publishing stated “According to Zuora’s latest Subscription Impact Report, in comparison with the previous 12 months, subscriptions in Digital News & Media grew by 110% between March to May 2020, although that rate is slowing.”

However, there are also far too many industry-related articles of job cuts and drastically reduced earnings announcements that make it clear that these digital subscription increases have not been anywhere near enough to offset the revenues being lost. Publishers still have much work to do.

And that starts with data

“While there are thousands of individual company scenarios, there seems to be at least one universal truth: **Future-proofing your digital subscription business begins with getting your data in order.**”

That statement appears near the end of this report (on page 36), but variations of it form a common thread that can be found throughout the following pages in our talks with publishers, including the Financial Times, The Economist, the Swedish regional news group Mittmedia, Nordjyske Medier and Politiken (both of Denmark), and Switzerland’s Tamedia.

The absolute necessity of having key, actionable first-party data available to staff members who need it when they need it across departments is something we heard repeatedly from publishers as being crucial to the success of their reader revenue endeavours.

For example, the FT’s Tom Betts explained that an analytics tool they created called Lantern has allowed their data team to identify correlations among data points such as the amount of time a reader spends on a page, the number of articles he or she has read, and so on, in order to determine that particular reader’s propensity to pay. However, Betts believes the true value of Lantern has really been in how it communicates to the newsroom staff those metrics that affect engagement. (See more on page 26.)

Data first, then the tech

While strategies will naturally vary, the publishers contacted for this report were uniform in emphasising that

the data strategy must come first and then the decisions regarding what technologies are needed to support that strategy should follow.

“Technology exists to support the business, not the other way around,” one North American chief technology officer told us.

Along these lines, we also note that “when building a sustainable digital subscription business, it pays to take a long view on how you shape your technology. What appears to be a shortcut now may result in limiting your flexibility in the future.” (See more on page 21.)

Flexibility, integration key issues for tech choices

And much of that applies especially when it comes to deciding on your basic tech architecture, or working with legacy systems, which most publishers inherently have.

Many publishers are moving to more service-oriented architecture (cloud-based) to have that flexibility for future development.

And flexibility plays a similar role in buying systems or building your own. In all of these decisions, there are upsides and downsides, which we discuss in the coming pages.

Regardless, **the level of integration of all systems is most crucial so they are “talking to each other” across the entire content and customer journeys.**

Flexibility is essential both in terms of internal data collection and exchanges among departments as well as in areas such as providing readers with a quick, easy way to become subscribers without disrupting their experience.

Afterall, your paywall is the first time you are asking a potential customer for their money. With a metered wall, it may even be the first time a reader realises that some

content is premium. This is where a lot of non-subscribers drop off, so optimising the conversion process for users is essential. And it’s worth remembering the benchmarks here have been set by the Netflixes of the world: **today’s readers expect a fast and hassle-free experience of two or three clicks.**

This was something that Sweden’s Mittmedia told us they learned the hard way. In the past, when readers of their publications clicked on an article through Facebook or the homepage of one of their titles, they were taken to a page with a message about payment, and when they clicked to pay they were sent to yet another site with a form to fill in, and then on to a third-party card payment solution. “We lost most of our readers at that first jump to a page that had nothing to do with the article they had wanted to read,” Mittmedia’s Head of Data Strategy, Magnus Engström, said. (See more on page 27.)

Aligning customer communications

One of the most technically challenging aspects of driving digital subscriptions is getting customer journeys, promotions, marketing messaging and other customer communications aligned across systems as well as across platforms. The starting point is to be able to use your behavioural data in a one-to-one segmented way, combine it with data about usage of other products, demographic data, and, for existing customers, the unique ID. (See more on page 29.)

That provides a good description of what Denmark’s Politiken is doing with its “data lake.” This data lake is in turn directly connected to efforts that its editorial and marketing teams call “Reader Promises,” which serve as concrete manifestations of the value of a Politiken subscription.

Today, many of these are in place with more in the works. The entire customer journey is now built around these promises, and the main objective is to get new subscribers to really engage with them within the first 100 days. (See more on pages 36-37.)

As with all journeys, there is no single “right” one that will work for everyone, but we trust that in learning about the experiences of other publishers who have taken similar paths, readers of this report will gain insights to help them make better decisions while avoiding some common problems as they make their way forward.



Sage advice from Schibsted: Put data and KPIs front and centre

Schibsted has been at the forefront of charging for online content for many years, and with a huge tech and product development team at its disposal the Scandinavian media company has gained invaluable experience. Tor Jacobsen is the Senior VP of Consumer Business for Schibsted Media and has been working on the subscription side of the business for a number of years. We spoke to him to glean some insights and advice about how publishers can approach their tech strategies.

What comes to your mind when characterising the seemingly complex nature of tech and data associated with digital subscription strategies?

When we think about subscription platforms we have a number of priorities. Foremost is the availability of data. Our model has been predicated on the ease of seeing KPIs and data – those have been the strongest drivers for us. You want the newsroom – down to the journalists – to be able to see how many subscriptions they’ve sold per article, or the engagement, etc. At the top level, subscription conversion is the most important thing for us right now. If I take a look at an article, I want to say “how is that performing? OK, that’s driven two extra sales. ... So if it’s only one extra sale, we can fine-tune it a little bit.”

So that is not an issue necessarily associated with the tech stack, but it’s more about the availability of data and the KPIs associated with that which is super important. That is not to say tech isn’t important, it is...

We have come from very different tech stacks over the years and are constantly trying to move to a common tech stack. Still, if you look at our subscription platforms, we have three different stacks that we want to merge. Everything will be integrated, but that takes a lot of time.

You mean the level of integration?

Yes. But if you look at how we’re getting customers in, it’s increasingly reliant on data and technology. It’s more about getting a dynamic paywall and tools that maximise the possibility for a paid article to convert. It’s about showing predictions, about buying propensity scores and the like. To integrate our platform is also important for us to get one customer view – to be able to easily follow our customer across all our brands and offer them the most relevant experience and product portfolio.

Schibsted has huge tech and dev teams groupwide and you have built many of your own tools and technologies... some other publishers probably cannot do that. What would you say to them about building vs. investing?

We have been quite focused on building much of our own platforms, but now we are taking a more pragmatic approach to that: should we partner, or should we be buying, or should we buy a partner? That is very important... It is critical to have good data and technology tools that can leverage your strategy.

But I also think it is important to know what you are as a company because a few years ago a lot of media companies started saying “No, we’re not a media company. We’re a technology company, or we are a platform company.” But I think that is wrong for many players. If you are really a media company, you probably should be a technology-driven media company, but the core of your business is content. It’s media at its core and then the technology is more a tool to succeed with that. And you don’t need to build your technology to be able to do that. You can also partner up and see a lot of the same effects. Naturally, that probably looks different company to company.

What can you say about the importance of knowing what you are trying to achieve as a newsroom or an organisation, that editorial, business, marketing, tech and product dev are all on the same page?

The great thing with digital subscriptions is that success is easy to measure. The KPIs are really the same for the editorial team, the marketing team and the team working with data analytics. So, whether it’s digital subscription base or engagement numbers, sales numbers, or commercial numbers... it’s easy to measure, and it’s the perfect way of combining the KPIs for all internal teams. And to make that happen, you don’t necessarily need to build a system, it’s more about having some key KPIs to follow. Some publishers can perhaps build their own systems, but for most companies it is probably easier to partner or buy systems to support that. And the things you have to look for is ease of integration, open solutions and flexibility.

Is there some “simple” advice you would have for a publisher just setting out on a paid content journey, in terms of the role tech can play in supporting their strategy?

Culturally, what was very important for us was testing and taking small steps. You can have a big plan and strategy, and should

have a vision of perhaps two to three years, but most important, I think, is to start with small steps, with A/B testing because you don’t need a big strategy to start with that. For instance, if you want to launch an email newsletter, or if you want to start to charge for some content, it’s best to just jump in and start. Perhaps you start with some family content or personal relationships content... That way you’re making progress and getting experience.

From there it’s then about trying something else, and then something else, because in the end the market will decide and the market will evolve, and the brands are different, your competitive advantage also could be different from brand to brand. So therefore, it’s impossible to have the perfect solution for everyone, but testing constantly gives you critical feedback to perfect your solution over time.

Schibsted has developed groupwide solutions and platforms, but also tried to keep local newsroom dev embedded as well? How important is that for this topic?

I think it’s very important to have people that are experts on product and technology, but you also need to integrate or embed it in the different teams and the newsroom. Ideally, you would have much of the tech and product dev teams facing similar tasks, challenges and KPIs as the newsroom, otherwise it becomes a silo. We talk about “crossover teams.” We say that working in crossover teams benefits the consumer business. You have data, product, technology, marketing and you have the newsroom. You can have different departments, but in everyday life, you try to work as closely as possible and towards a lot of the same goals. That’s true across the entire business. If you look back three or four years, we were a bit more silo-oriented in terms of how we were working. Now it’s more and more integrated.

How does Schibsted fare in attracting the right talent?

I cannot speak for other markets or regions, but here in Norway and Sweden, I don’t think we have a huge talent problem at the moment. Mostly I don’t think it’s hard to hire people because the media industry, and here at Schibsted, is still a place which is very interesting because we have that big mission.

Like with other positions, we see people coming in from totally different disciplines and industries.



Chapter 1

Choosing the data architecture

The publishers we contacted for this report were unanimous on one point: To effectively drive a digital subscription business, it is essential to harness the value of first-party data. It needs to be structured in the right way and – key – needs to be accessible and actionable by internal stakeholders. The scope and objectives of a data strategy may vary, but whatever strategy is adopted, it should form the basis of all subsequent tech stack decisions. The data mindset comes first, then the tech – that is the consensus.

In this chapter we discuss options concerning data management that publishers face, and describe lessons they have learned. “What we’ve discovered is that data helps unify our priorities. It helps us to recognise and identify what matters to our readers, to our customers. Those are things that ultimately unify editorial and commercial,” Tom Betts, Chief Data Officer at the Financial Times Group, told us. This report also includes input from managers at Nordjyske Medier (Denmark), Mittmedia (Sweden), The Economist, Dow Jones, and Tamedia (Switzerland).

Digital publishing begins and ends with clean, well-organised data.

Data is what links all parts of the business together, enabling collaboration and all kinds of critical actions, from effective marketing to powerful journalism. The data must be at the fingertips of the people charged with developing the business.

Without the right data, they’re flying blind.

In theory it's simple. We've all seen those illustrations of workflows with a database depicted as a cylinder and arrows running off in all directions, feeding seamlessly into whatever system needs the data. In reality, of course, it's often more complex. Nonetheless, some publishers, such as Mittmedia in Sweden, have succeeded in making their data platforms pretty close to invisible.

"The advantage of knowing we have a safe data platform is that we can ignore it. Tech doesn't need to enter into our discussions – we know it works – and we can focus on the business effects instead," says Mittmedia Head of Data Strategy Magnus Engström.

Conducting a data inventory

As publishers shift their main revenue focus from advertising to subscriptions, they are also shifting their data focus. Where they used to buy third-party data to build and expand advertising products, they are now finding that with a subscription business model, first-party data is the mainstay of success. All data on subscribers, from personal information to their reading habits,

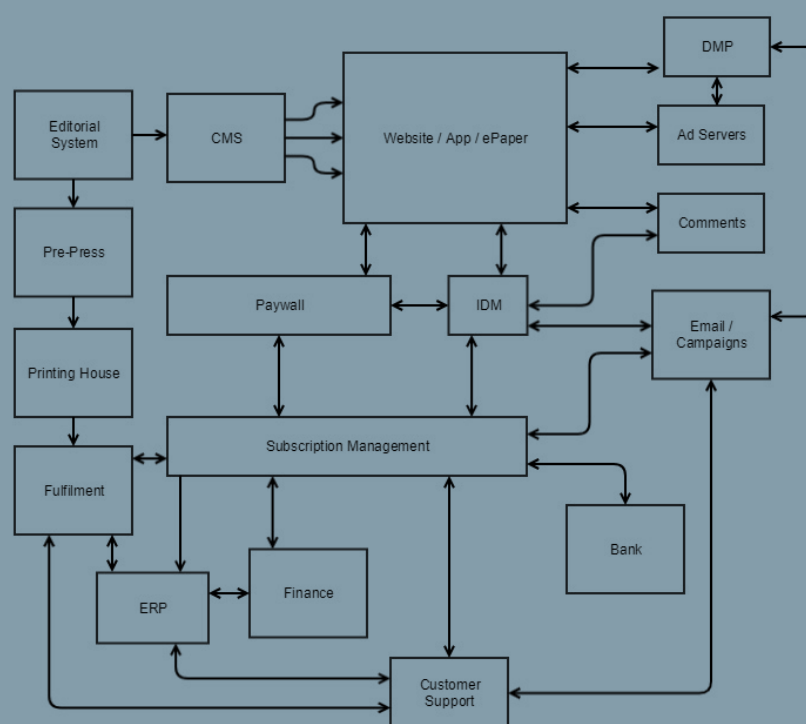
constitutes the base for a long-term customer relationship built on trust and a positive user experience. If third-party data is added to the equation, control and quality are put at risk, endangering that relationship. So it pays to be clear about where, how and why any third-party data is used, if it is used at all.

Regarding first-party data, the publishers we spoke to broadly divided it into three categories: **interactions, content, and consumers**. The key to understanding an audience is to work out how the three are linked. What content does reader A consume, and how do they interact with it?

Data on **interactions** can reflect a lot more than just clicks: How often does the reader return, how many articles do they read each time, what types of content do they consume, how long do they spend on your site, how deeply do they scroll? And so on. Interactions generally constitute publishers' subscription business KPIs and indicate trends such as churn and retention. Being able to effectively measure interactions is crucial to understanding the business performance.

Content is most commonly understood based on a structure created by the newsroom, with tags and meta-data indicating the topic, author, type of medium, etc. Content also includes unstructured data points, such as names of people or organisations mentioned in the text.

Building an effective reader revenue tech stack can be a complex undertaking since it usually requires bringing together diverse components and systems from across a publishing house in order to share data efficiently. Image courtesy of MPP Global.



Finally, there's the **consumer data**. In the case of a registered user or subscriber, it's all the information the publisher has been able to gather about the person during the registration process and subsequent interactions. In the case of anonymous users, it might be behavioural data recorded by cookies and other trackers, linked to a browser or device ID – depending on what is possible and what is permitted by the individual.



Tom Betts
Financial
Times

Data helps unify priorities

"I think of data as a way [...] of creating a common language, a common way of talking – in particular between editorial and commercial, where historically you've had a church-and-state divide. You have different and competing objectives. In digital, maybe, that's even still the case. But what we've discovered is that data helps unify our priorities. It helps us to recognise and identify what matters to our readers, to our customers. Those are things that ultimately unify editorial and commercial. Because if we can please our customers, if we can make them engaged, then ultimately they're having a positive experience, [and we] achieve commercial success."

It turns out that management of user data, including interactions, should be consistent across the entire digital ecosystem. For example, if a publisher has built a propensity-to-churn model, a flag is "attached" to any customer that falls in this category. That flag then needs to appear in all customer contexts – apps, websites, newsletters, KPIs, metrics, customer service – and must signify the same thing across all.

This is called a **unified user model**, and is also needed to manage, for example, how content is pushed to individual subscribers. To avoid irritating the subscriber, the publisher should show them a specific piece of content a limited number of times in their push notifications or newsletters. If they don't click on it after it appears, say, four times, it should stop being displayed for them. In the world of advertising this is known as "frequency capping."

The news publishing industry differs from many other industries in the sheer quantity of consumer data generated and gathered. Consumers visit often, sometimes several times a day, and behaviour on a news site generally is more multifaceted and complex to analyse than on an e-commerce site, for instance.

Regardless of the volume, making use of that data is vital for both the business and the editorial mission. To make the data actionable, stakeholders throughout the organisation need to be able to access and use it in a variety of ways. For example, while data about content viewership can be organised and acted on in terms of newsroom-defined categories, it can also be analysed from the audience's point of view. Thus a recommendation agent can present the consumer with another article based either on a content category or on the articles that similar consumers were reading. Allowing multiple "views" of the data provides opportunities for better analytics and understanding, and in turn, more effective marketing and communications.

Two types of data architecture

There are two main types of structures for storing and accessing data gathered in the digital ecosystem. One is an enterprise **data warehouse solution** – a system that manages and makes accessible all the data from a central location. Providers include Oracle, HP and Cisco. In data parlance this is called a converged infrastructure.

Another option is to keep the data where it originated and build an **in-house middle layer data platform** between databases and management information systems/customer-facing systems. This methodology is sometimes called best-of-breed. It allows the publisher to replace any systems on either side, meaning they can be fairly flexible in their tech strategy and avoid being tied to a particular vendor and its development path.

(Note: For the sake of clarity and brevity, we are over-simplifying the choice between data warehouse and middle layer data platform.)

Most news publishers are deeply entrenched with legacy systems, often implemented at different points along a winding path of shifting priorities. For many the key challenge is how to ingest information from systems related to the print product(s). Also, as additional systems are connected to an already sprawling infrastructure, the potential for data duplication and corruption grows.

If no system is the mother of all other systems, every time data is moved from one place to another a process called an ETL (export-transform-load) is performed. Every ETL adds to the complexity and risk of corruption. This is a huge headache in most news publishing houses. For the purposes of this chapter, however, let's put the ETL/legacy systems issues aside and examine the two main data management options.

Deploying a data warehousing solution involves a substantial commitment and considerable costs, but can be the simpler option, particularly for publishers with limited in-house tech skills. This solution also means there is a single entity to contact for updates, repairs, and so on.

Building a data platform, on the other hand, requires in-house development skills. The payoff is flexibility in the systems that are connected to it.



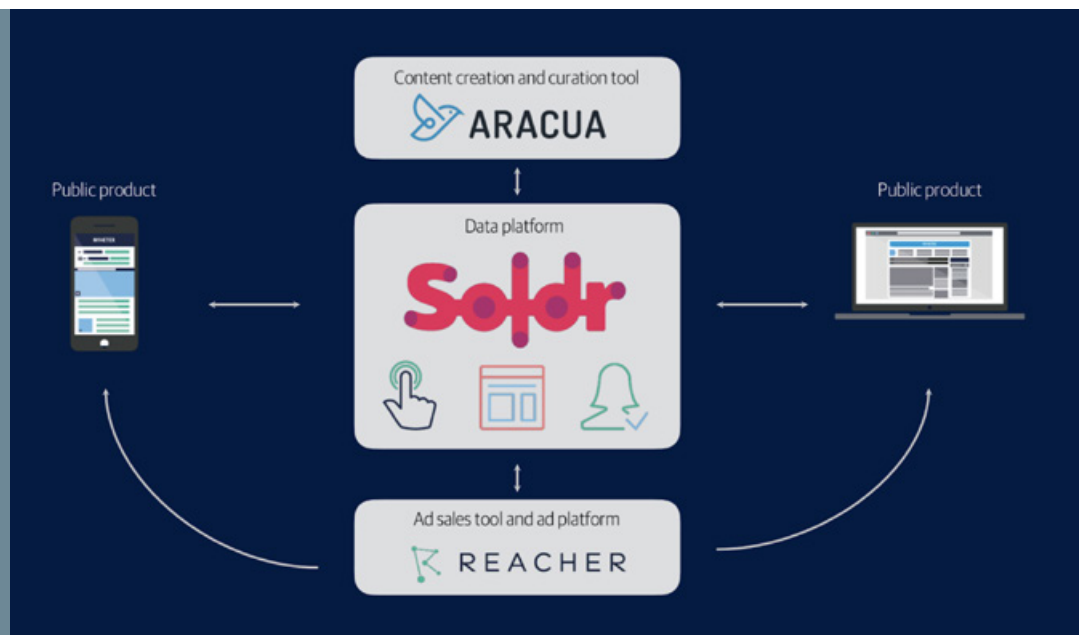
Magnus Engström
Mittmedia

Recruiting data scientists

Data science is a hot field, and hiring data scientists is a highly competitive business. Many news publishers struggle to attract the skilled professionals they need to work with their data. Swedish regional news group Mittmedia has found that building an in-house data platform has helped. With Soldr (see main text) and the robust data transfer between systems it offers, there are no technical limitations to the data scientists doing their jobs. Says Head of Data Strategy Magnus Engström: "With Soldr we have a complete representation of the digital ecosystem and everything happening. This gives us safety; we know that when we hire an analyst in the ad department or a content strategist in the newsroom, this person will be able to fully do their job. It means everyone speaks the same language."

Engström says the key to attracting people with the right skill sets is creating the right conditions to leverage those skills – not least in the case of data scientists, whose job it is to work creatively with the data to identify business solutions and opportunities. "Everyone I've recruited has been recruited with the pitch: 'There are huge challenges for our industry. We need you to get on board and start innovating. We know our problems can be solved but we don't know what the solution is. We can't put you at a desk and say, 'These are your tasks and this is where we're going.' Rather we need you to look at our data and tell us where to go.' There are lots of smart people who cannot resist the challenge of that type of problem-solving," he says.

Soldr, Mittmedia's inhouse data solution, is the link that connects all the systems applications and the big central databases in the company's digital ecosystem.



Danish media house Nordjyske Medier has deployed this type of data architecture. Says former Online Marketing Manager Jesper Johansen: “We didn’t see much value in moving all our data into a data warehouse. A lot of our competitors have chosen Oracle Blukai. It would be a very big commitment for us to move all our systems into a big enterprise solution like that. We chose best-of-breed architecture, which for our needs seems a lot more agile.

It means that if at some point we find there is a better tool or service for automated marketing, for instance, than what we have, it should pretty much be plug-and-play to switch the systems out, with all our data flows intact.”

When describing this type of architecture, publishers sometimes say they’ve built their own data platform, but to think of it as a single cohesive entity is not really accurate. Instead, this middle layer can be described as a “number of little services which have agreed on how they transfer data between one another,” as Mittmedia’s Engström puts it. Mittmedia’s in-house data platform, called Soldr, is the link that connects all the systems applications and the big central databases in their digital ecosystem. Soldr is the sum of all those arrows in the workflow illustration, if you like.

In order to make the data properly actionable and valuable for the business, it needs to be reliable and accessible by everyone involved. In systems terms that means the company has to guarantee “robust data transfer.”

Says Engström, “We have very strict data guidelines and clear requirements in terms of data quality at the point of export and how it’s shown in systems, to colleagues. As long as all data is accessible from all points and can be iterated back and forth, there’s no real reason to build everything with the same code base; instead we have Soldr. So any application can use data from any database to build whatever it is that’s being built.”

For Mittmedia, Soldr has freed the business organisation and newsrooms to experiment and act without thinking about the technology involved.

Whatever data architecture is chosen, publishers we contacted say it is essential to conduct a proper inventory of the data held in-house and how it flows through the organisation. That needs to be done, they say, before any business strategy can be effectively implemented and before any decisions are made about what should and shouldn’t be in the tech stack. Robust data is the first step on the road to fully leveraging tech in a subscription business.

Publishers emphasised to us that business strategy must come before tech. That is, in the context of reader revenues, any tech stack investments should be preceded by the establishment of the underlying business strategy and goals. Once those are in place, a number of key aspects related purely to the deployment of actual technology should be considered. How tech is implemented will affect the company's ability to execute on business goals long into the future.

A tech checklist

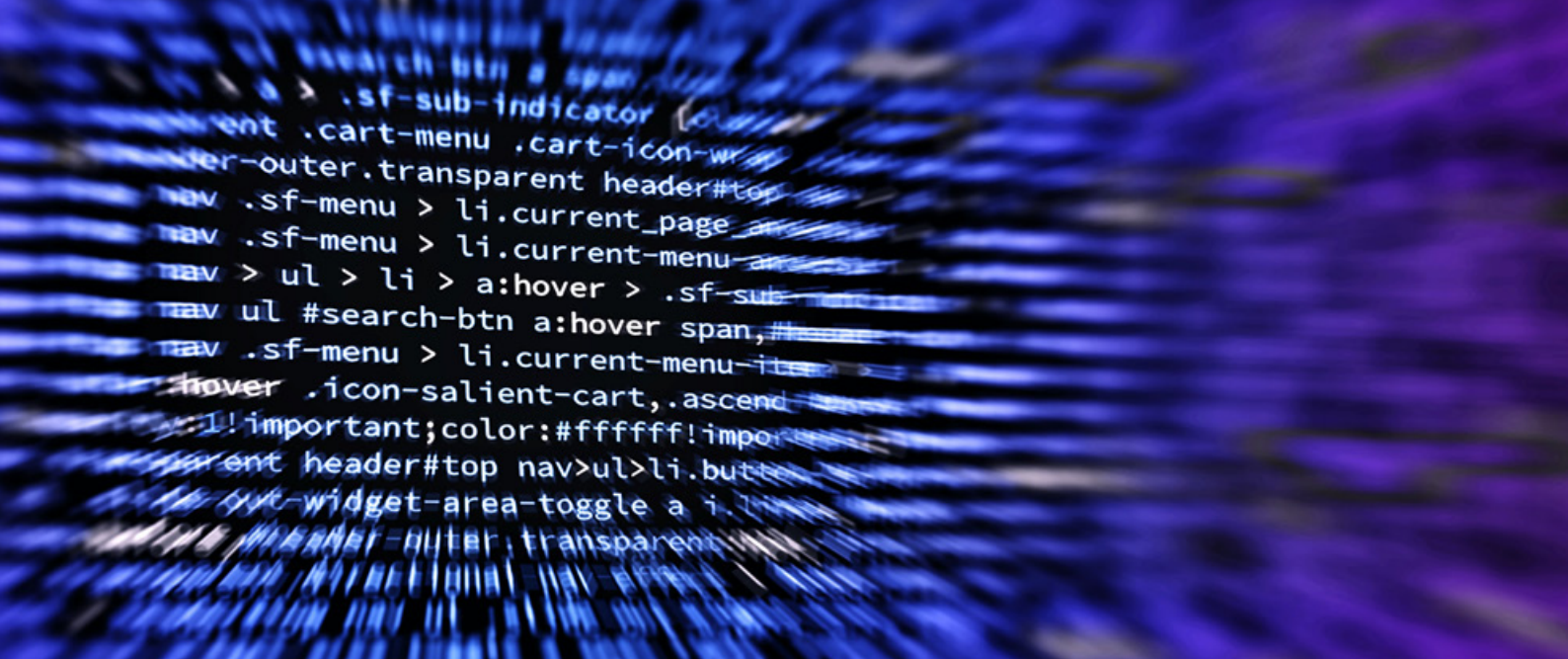
The tech architecture of a publisher's digital ecosystem determines what is possible to achieve across the entire organisation. While this checklist was compiled in the context of tech investments related to reader revenues, how you deal with the issues listed will have an impact far beyond your digital subscription business, according to publishers contacted for this report.

It must also be noted that for most publishers, the answers to the questions below are far from straightforward. Traditional news publishers have legacy systems that do not slot seamlessly into a new tech strategy, but that cannot be abandoned for financial and/or practical reasons – in many cases because they relate to print. In a perfect world you would be able to take relatively simple decisions on each of the items in this checklist. In the real world, the list can guide you in weighting each aspect in the face of financial and practical restrictions.

A. Integrating new components with existing systems vs starting afresh

For most news publishers, deciding to what extent legacy systems must be retained is the central point when it comes to tech stack investments. That decision should be taken with a view to costs in the long term. A significant up-front expenditure might be required in order to transcend the limitations of old systems, but in the long term using those old systems might prove more expensive because of the need to continuously integrate new tools into the existing stack.

Says the CTO of a U.S. regional news publisher, “Supporting the core legacy systems actually prevents newspapers from making the real transition. For example, you may launch a new website, but in reality it is simply a fancy front end on top of something ugly – and the integration effort is expensive and limiting. The bold approach is to re-envision the business completely as if you were a startup and not encumbered by any of the old ways.”



Key issues to consider when **continuing to build on legacy systems**:

- How is data managed between the old and new systems – including information that began in the analog world, e.g. subscription sales via telemarketing or customer journeys logged in the print circulation system?
- With API integrations with additional systems, do these allow automatic notifications that push updates to other platforms for every element of everything that they do?

Key issues to consider if you **re-envision your tech from scratch**:

- Data management across systems (see the previous chapter).
- All of the aspects covered in the rest of this chapter.

B. Enterprise vs service-oriented architecture

There are two basic types of systems architecture, or platform. Twenty years ago, when many newspaper systems currently in use were deployed, the standard architecture was the **large enterprise system**. An enterprise system consists of hardware installed on-site. These systems are basically out of the publisher's control in terms of any day-to-day adjustments.

Today, enterprise systems are, as a rule, seen as much too limiting in terms of upgrades and flexibility of use. New investments are generally **cloud-based** (e.g. Microsoft Azure or Amazon Web Services) and built on a **service-oriented architecture (SOA)**. No hardware is installed on site, and the architecture enables cross-systems communication, independent of vendors and technologies. This approach enables the integration of new systems relatively easily.

For instance, new marketing automation platforms are being released nearly every week, and to be in a position to adopt the latest and most promising one on a “plug-and-play” basis via an API, you need a core platform that supports that type of integration.

Service-oriented architecture represents current best practice because it provides flexibility and a certain degree of future-proofing. With service-oriented architecture, you are free to deploy any number of back-end and front-end systems. The front end includes all tech that touches the customer in any way, including marketing automation (including email), optimisation, digital advertising and associated tech, products/bundles, paywall, chat, and the call centre.

The **back end** consists of the internal business systems that manage items such as customer IDs, billing, and the entire customer journey, including subscription history, complaints, etc.

In addition to the back- and front-end tech, it's impossible to run a digital subscription business effectively without one or more **management information systems (MIS)**. These are like the instrument panel

on a car. They tell you what is going on and provide coordination, control, analysis, and visualisation of your business information – internal as well as external (e.g., customer activity on your website).

Some vendors offer systems that span front end, back end, and MIS, including customer journey and billing, marketing actions, product/bundle launches, visualisation of real-time online user behaviour, conversion statistics, and so on. These systems may also include print subscription management as a default. At the other end of the spectrum are vendors who specialise in a narrowly-defined aspect such as paywall management, data visualisation in the newsroom, or email automation. Most tech suppliers, though, fall somewhere between those two extremes, offering a combination of functions such as paywall, marketing automation and personalisation, or real-time visualisation and customer journey management.

C. Building your own solution(s) vs off-the-shelf

There are some intrinsic downsides to off-the-shelf options. For one thing, the tools they offer may not align fully with the strategic priorities of the media house that seeks to use them. Also, publishers say they are rightfully reticent to give up any aspect of their business to a third party whose priorities lie elsewhere.

And while building your own tech stack is generally too expensive and, more importantly, too time-consuming for small, medium-sized and even larger news publishing companies, it might nevertheless be worthwhile exploring the advantages of taking this route for at least some components.

Again, this is not a black-and-white issue. If you do not have the resources to build everything in-house, find out which parts of the tech stack you need to control fully in order to implement your business strategy effectively. Make sure you have a stack that allows continuous innovation so you don't get locked in with a specific provider for key tasks.

For Danish media group Nordjyske Medier the answer was to implement a best-of-breed architecture with a home-built middle layer, into which front- and back-end systems can be integrated with data flows intact (see box). Jesper Johansen, Online Marketing Manager at Nordjyske at the time, also pointed out that no matter what the vendor tells you, don't assume new tech will be plug-and-play. "They might tell you that you can just embed a JavaScript and you'll gain all the value in the world. Not in my experience. You have to do the work

Nordjyske Medier

Building a middle layer

Danish media house Nordjyske Medier has implemented a number of vendor solutions, but has created what former Online Marketing Manager Jesper Johansen (he has since left the company) calls its own middle layer. "We have a best-of-breed architecture, which helps prevent vendor lock-in. It means we use a lot of different tools that are connected through a middle layer that we've built ourselves. If we decide we need to exchange one of the tools for a different one, it should pretty much be plug-and-play – with the data flows intact." Any system functionality that's online is communicated via JavaScripts on each page view, "which means we can deliver first-party data through the web."

Johansen said the decision to integrate all systems through a proprietary solution was based on the need for control. "Some things we just consider to be so vital to our business that – even if it were cheaper to outsource – we want to do ourselves, to have full control of certain features and calculations. Understanding our subscribers is such a vital part of our business that we would never outsource it."



“Using data scientists to set up dashboards for managers to look at is a waste of time. Let the managers make their own dashboards.”

Kjersti Thornéus, Director of Product Management, Schibsted Media Group

yourself and adapt to the system somewhat. If you have a data-driven mindset, then tech will become much easier. But it's never plug-and-play. If it's plug-and-play, then you are not doing enough – then you are only on par with the market. You'll never be a front-runner," he said.

There is a fundamental consideration here, and that is to what extent you should be a **media and tech company**. This point is more strategic than practical, of course, and at its core, it's what this entire report is about. The term “paid content” is a misnomer; in the digital subscription business the product consists of far more than just the journalism produced by the newsroom. Also crucially important is the technology that enables its publication, distribution and consumption – the app, the site and underlying stack.

As Kjersti Thornéus, Director of Product Management at Schibsted Media Group, said at the 2019 Newscamp conference: “We are a publisher but we are a tech company, too. We strongly believe we can't be the first without being the other.”

D. Off-the-shelf: Some vendor-related questions

While the functionality on offer is the predominant factor in choosing what type and size of system to purchase, there are a few other vendor-related aspects you should consider:

- **What is the vendor business model and how does it impact ROI?** How you pay for the software will affect the return on investment, especially in the longer term. Transaction-based functions in marketing or email systems may limit your freedom to act. If each new function you want to include in a system is expensive, that may become a roadblock to progress. Some vendors have introduced a more collaborative approach, charging for use of the software per media channel, e.g., one website or one app. Beyond that, the aim is to get the publisher to freely (with the help of the supplier) build out the integration of the tech without being limited by financial considerations. The intent is to make the publisher as successful as possible, creating a win-win situation. Of course, this model hinges on a focus on longer-term results, for the vendor as well as the publisher.
- **How much flexibility does the system permit?** This question is closely linked to the previous one. Current best practice are systems that put product launch and development, for example, in the hands of business users, providing operational efficiency and freedom to experiment. You should not need to involve the supplier in tasks such as changing the payroll or creating new on-site messaging. That is absolutely essential for innovation and business development.
- **What is the vendor's own roadmap?** This question is, to a degree, related to how deeply they are invested in the news publishing industry. That's not to say you should rule out suppliers that are not developing systems specifically for publishers. There are many general functions, such as billing, email and marketing optimisation, that may even

be better served by a developer that builds for a wider market and can therefore put more resources into updates and improvements. However, when it comes to systems for core digital subscription functions such as paywall, funnel management, customer journey and MISs providing analysis and visualisation related to content and audiences, **you should ensure that the system vendor truly understands publishing.** How is this apparent in the service and software offer? Does the supplier's development roadmap align with your future business needs? Do they have a sufficiently large market to survive in the long term? Or, if the vendor is a newcomer, what assurances do you have that they will be able to fulfill their obligations to you? Just as the news publishing industry needs to constantly change and innovate in order to stay current and relevant to audiences, so do its suppliers.

E. The issue of time

We've talked a lot about data in this report. Alongside the product, it is the principal asset of all digital subscription businesses. However, **its value can be considerably curtailed if the business doesn't have the technical capabilities to act on it effectively.** At the most basic level, businesses need to understand their data, analyse it, and generate reports in order to make long-term strategic decisions. Data aggregated over months or years, which is usually pretty easy to retrieve, informs those decisions. Business intelligence such as **Customer Lifetime Value** or **churn information** can be based on daily data points.

Nonetheless, at the most advanced level are operational and automated decisions that require accurate real-time data. That is of course a far more complex proposition, involving the more or less instantaneous consolidation of data across systems to create a seamless customer experience. For example, if a reader who has just become a paying subscriber keeps getting subscription offers on article pages as they continue browsing, it's probably because the publisher's system that generates marketing/landing pages is not communicating with the system that hosts article pages. The result is an incoherent user experience.

Publishers need to determine where real-time data access is crucial and where it isn't. The challenge is to ensure that the data needed to execute key functions is available and actionable between systems. **The real-time aspect of customer journey orchestration is one of the toughest technical issues to address,** but one that – if resolved – can significantly improve the customer experience and increase the value delivered.

Speaking at Newscamp, Schibsted's Kjersti Thornéus said a key factor in achieving that aim is to utilise personnel effectively. Make sure you have your data scientists working on directly actionable data, not compiling reports, Thornéus urged. "Let these people deliver results, not report on them. Using data scientists to set up dashboards for managers to look at is a waste of time. Let the managers make their own dashboards," she said.

Ultimately, when building a sustainable digital subscription business, it pays to take a long view on how you shape your technology. What appears to be a shortcut now may result in limiting your flexibility in the future. **The aim should be that newsroom and business professionals can test and execute on new ideas without running into technical constraints.** The closer you can get to that state of affairs, the more successful your reader revenue business is likely to be.

"Data helps us to recognise and identify what matters to our readers, to our customers. Those are things that ultimately unify editorial and commercial."

Tom Betts, Chief Data Officer, Financial Times



Solutions providers with reader

ANALYTICS

Chartbeat <https://chartbeat.com>

Deep BI www.deep.bi

Facebook

www.facebook.com/facebookmedia

Google

<https://analytics.google.com/analytics/web/provision/#/provision>

Linkpulse <https://www.linkpulse.com>

smartocto (includes the company formerly called Content Insights)

<https://smartocto.com>

Twipe Mobile Solutions

www.twipemobile.com

Visiolink www.visiolink.com

CONTENT MANAGEMENT SOLUTIONS

alfa Media Partner

<https://alfamedia.com/en>

Atex www.atex.com

Dos al Cubo www.dosalcubo.com

D-Share www.dshare.com

EidosMedia www.eidosmedia.com

Funkinform <https://www.funkinform.de>

IcemanMedia AB

<https://icemanmedia.com>

InterRed www.interred.de/en

Naviga (formerly Newscycle)

www.navigaglobal.com

ppi media <https://ppimedia.de/en>

Protecmedia

www.protecmedia.com/cover

Publish Inc. <https://publishprotocol.io>

Quintype <https://www.quintype.com>

Stibo DX (formerly CCI Europe and Escenic) www.stibodx.com

WoodWing www.woodwing.com/en

ARTIFICIAL INTELLIGENCE

United Robots <http://unitedrobots.ai>

Sophi (Globe and Mail)

<https://sophi.io>

DATA PLATFORMS/CONSULTING

MWM <https://www.mwm.se>

Mather Economics

www.mathereconomics.com

PAYMENT SYSTEMS

ASMIQ AG <https://asmiq.ch/en>

Axate (formerly Agate) www.axate.com

Google

www.google.com/intl/en/ads/publisher

Publish <https://publishprotocol.io>

ViewPay <http://viewpay.tv/publishers>

revenue-related tech offerings

PAYWALL PROVIDERS

InterRed www.interred.de/en

Poool <https://poool.fr/en>

WhiteBeard www.whitebeard.me

SUBSCRIPTION INTELLIGENCE

Chartbeat <https://chartbeat.com>

Mather Economics
www.mathereconomics.com

Naviga www.navigaglobal.com

SUBSCRIPTION MANAGEMENT/BILLING

AdvantageCS www.advantagecs.com

Anygraaf <https://neo-digital-publishing.anygraaf.net>

ASMIQ AG <https://asmiq.ch/en>

Deep BI <https://www.deep.bi>

Google
<https://developers.google.com/news/subscribe>

MPP Global www.mppglobal.com

Protecmedia
www.protecmedia.com/cover

Swanest
<https://swanest.com/business/media>

WEB/APP PUBLISHING

alfa Media Partner
<https://alfamedia.com/en>

Atex www.atex.com

EidosMedia www.eidosmedia.com

Facebook <https://www.facebook.com/facebookmedia>

Funkinform <https://www.funkinform.de>

Google <https://developers.google.com/amp>

InterRed www.interred.de/en

ppi media <https://ppimedia.de/en>

PressReader www.pressreader.com

Protecmedia
www.protecmedia.com/cover

Stibo DX (formerly Escenic)
www.stibodx.com

Twipe Mobile Solutions
www.twipemobile.com

Visiolink www.visiolink.com

WoodWing www.woodwing.com/en

Dozens of solutions providers around the world are active in the spaces that are covered in this report. We've compiled a list of WAN-IFRA Member companies (in alphabetical order) that work in these areas. It is worth keeping in mind that many of these companies offer solutions in more than one of the areas mentioned as well as in related areas that are outside the scope of what we have covered.



Chapter 3

Tools and challenges

With your data platform in place, and with the company's customer, content and interaction data accessible and actionable to your internal stakeholders, you can start to rev up your digital subscription engine. In order to determine what tech is required for acceleration, you first should decide what it is you need to be able to do – both initially and as you grow. In this chapter we cover some of the key functionalities and capabilities needed to operate, drive and develop a digital subscription business.

The emphasis here is on the business, the actions required. Control should sit with marketing, newsroom and product staff, publishers agree. Tech is secondary, a support. If you have the organisation and processes built out first and you know what you want to achieve, then it's advisable to highlight the goals, and work out how to get there.

“Technology exists to support the business, not the other way around,” says a North American CTO. “Sometimes you need to change your business requirements, which is where traditional IT fails to provide value. They document users’ requirements and go away and deliver to the spec. But maybe the users were stuck in their legacy mindset and the IT team ended up building the old system on the new tools. I have always challenged my team to try to understand the real business need and to separate the ‘requirements’ from the ‘desirements’.”

Before we dive into the specifics of business functions, a few words on the process of building up understanding in the organisation. Many of the publishers we interviewed emphasised the importance of taking things one step at a time. Says Magnus Engström, Head of Data Strategy at Mittmedia in Sweden: **“You need to learn to walk before you attempt to run.”** Take personalisation as an example. It's a pretty advanced proposition. Perhaps you should get your A/B testing working well first. We're happy to be able to now do personalisation and geographic clustering – but in the early days there were more fundamental challenges that needed solving first, like the fact that we had customers with different email addresses in different systems.” (See box “Testing before building” on the next page.)

Unifying data tracking

Reliable business intelligence is essential in order to determine strategies and draw the roadmap, as well as conducting day-to-day customer-related actions. How do you uncover your most valuable customers, how do you segment and analyse the data about them, how do you identify unexplored opportunities based on customer insights? Without incontrovertible intelligence you're at sea.

A key challenge when it comes to data tracking is duplication or gaps in the data between systems, which can paralyse business development. Says Peter Figueredo, co-founder of House of Kaizen, a subscription strategy consulting firm that works with clients such as The Wall Street Journal and Condé Nast, "In my experience, the people who have the mandate are those with the purse strings, so usually the finance team. They'll not accept marketing reports unless these are validated by data. Systems need to be aligned so they can have faith in the numbers they're given. Execs and finance need reliable and actionable data, especially if it's a public company; otherwise there are too many questions around numbers for them to feel comfortable with the direction the business is going."

There are a number of ways you can unify your data tracking. "It's key to have a single source of truth – to be sure all teams, as well as partners, are optimising to real numbers," says Figueredo. He recommends publishers use the analytics system as that single source, with data from marketing, billing, etc., coming through it, to see what's real and what's not. "Having marketing be the single source of truth can work, but it's not ideal – analytics should be the backbone of your marketing strategies," he says.

When it comes to accessing business intelligence, the benchmark today is that a publisher's business employees should be able to create their own dashboards, either in a vendor-supplied system or a solution built in-house. Collating stats shouldn't require data specialists.



Magnus Engström
Mittmedia

Testing before building

Mittmedia tend to test their hypotheses before launching into any kind of build. "Let's say we decide it would be a good idea to let users turn off sports content. Rather than build that functionality – which would require time and resources and impact the entire ecosystem – we'd perhaps begin by posing a yes/no question on our homepage: "Would you like to be able to turn off sports?" That would be our starting point: looking at the answers, the demographics of the yes versus the no respondents, and so on. I often get emails from colleagues who are about to set off on a super-ambitious long project, wondering if I can offer any advice. My answer is always: 'Don't do super-ambitious long projects!' It's about building blocks."

Keeping the reader in the editorial context

Your paywall is the first encounter a potential customer has with your request for their money. In the case of a metered wall, it may even be the first time they realise that some content is premium. This is where the majority of non-subscribers drop off, so obviously optimising the conversion process UX is absolutely essential. The benchmark has been set by the Netflixes of this world – two, max three clicks and you're in.

After some years of trial and error, best practice today is to make sure the reader is reminded throughout the conversion process why they have decided to become a paying customer. It is strongly advisable to avoid disrupting the UX by moving



Tom Betts
Financial Times

In-house tool tracks articles

(and communicates company priorities)

At the Financial Times, the engagement team employs a mix of techniques to keep its journalists informed about the paper's strategic priorities. It does so under the aegis of its analytics tool, Lantern, which provides granular feedback to journalists and editors on the success of a given article or series. Launched in 2016, the tool itself has evolved alongside the paper's priorities, and the engagement team takes pains to make sure that journalists understand not only the metrics themselves but also how the data informs the broader subscription strategy.

Tom Betts is the chief data officer at the Financial Times. He says the deployment of Lantern in the newsroom is creating a kind of common language across all departments: "I see data as a guiding light or some sort of compass, which is helping you navigate through what is potentially a very uncertain environment."

Lantern has allowed the data team to identify correlations among data points such as time spent on a page, number of articles read, and so on, in order to determine a user's propensity to pay. Betts believes the true value of Lantern, though, lies in how it communicates to the newsroom those metrics that affect engagement.

"Where we are now is 'How do we embed that data into people's workflow, so that it's just a step in the process of what they're doing?' And actually it's almost like a step backwards from the data tools, because we're trying to say to people, 'Instead of having a stand-alone tool, let's put the data in a way you are familiar with.' And so you've just got the contextual information available and useful."

Betts cites a tool that alerts journalists when an article has a particularly notable gender imbalance – which has been shown to limit successful conversions – as an example of how Lantern is aligning journalists' work with the company's strategic priorities: "It's a process that scans the articles once they're published and effectively assigns a score to try and say, 'Well, actually you haven't really created a complete metadata footprint yet... please go back and make some improvements.' Because if you make some improvements to the metadata, we can then use that information to help people find the content that's going to be most relevant to them."

them out of the editorial context. Says Magnus Engström, **“Without a doubt the biggest business challenge for us when we started the paid journey was [eliminating] the change of context we put readers through.”** When a user clicked on an article from Facebook or the homepage, they were taken to a page with a message about payment, and when they clicked to pay they were sent to a completely different site with a form to fill in, and then to a card payment solution delivered by a third party. “We lost most of our readers at that first jump to a page that had nothing to do with the article they had wanted to read.”

The procedure was changed to keep the article visible in the background during the entire payment process. After payment the block is removed. “This is crucial to get a reader revenue business up and running at all. The reader must never change context during the conversion process. Not once; never,” emphasises Engström.

Whether a publisher uses a metered or a hybrid paywall model, it is possible to construct it so that the appearance or non-appearance of a paywall notice depends on information available about the specific user. Publishers told us that you might want to allow fly-by visitors, who are highly unlikely to convert anyway, to access more pages for free, thus generating more pageviews for ad sales. On the other hand, when a regular visitor clicks on an article about a topic they are particularly interested in (as seen in behavioural data), this may be the right time to offer a subscription.

During the past few years, what is sometimes called a dashboard paywall model has gained popularity. This is in effect another form of dynamic paywall, but rather than looking at who is reading what, it is based on how a particular article is performing.

At Swedish quality daily Dagens Nyheter, articles that generate a lot of traffic (by meeting certain thresholds in an algorithm) can be put behind the paywall after three to four hours.



Jesper Johansen
Nordjyske Medier

The challenges of running a dynamic paywall

Danish publisher Nordjyske tested a dynamic paywall based on content interest segments coupled with behavioural data about usage and engagement. But several challenges, technical as well as business-related, led them to stop and take stock of the situation:

How to communicate value? How do you let a user know that they are accessing, for free, an article that is generally premium – without disrupting the UX? “We want to make sure they understand the value, but it was hard to work out how.”

Cost of moving the conversion point down the funnel. Operating a dynamic paywall, where the conversion point is generally moved down the funnel, is more costly. “With 10 segments running with different variables and rules, there are a lot of parameters that need to be evaluated thoroughly when running a dynamic paywall. You need to have a person evaluate all the data. So the increase in conversions needs to match that effort.”

Problems with a server-side paywall. For test purposes, the publisher had the paywall running client-side, which worked well. But a live dynamic paywall needs to run server-side. If run client-side, it is very easy to hack with an ad blocker or similar. “When we switched it to a server-side paywall it didn’t work as expected with our cache server,” says Johansen.



Ian Noakes
The Economist

The full funnel journey should inform the paywall

The realities of providing flexible, dynamic paywalls alter constantly. In July 2019 the metered paywall model was effectively killed off, according to some media commentators, because Google closed the loophole that allowed publishers to recognise whether or not a visitor to their website was in Incognito mode. That made it impossible to tell for certain whether visitors had hit their article limit.

Ian Noakes is Chief Customer Journey Officer at The Economist. Like the majority of publishers, it is attempting to sign up as many subscribers as possible, to take advantage of recurring reader revenue. He says each customer journey is different, dictating the development of flexible and dynamic paywall options: “[Customers] don’t follow a linear path. Each and every one of you is being influenced even in your presentations and your walks around London by other influences that are helping guide decisions that you will take about products and services.”

For instance, he notes that a key factor determining whether a reader will subscribe is their awareness of the brand. Audience members who understand The Economist’s brand are more likely to subscribe instantly, while those who are less aware of the brand require more points of contact before conversion.

Thus having the tech to understand the user journey to conversion is vital: “Did they go to the Economist Films site? Did they go to other areas? How do we get a sense of what the important elements of these things are? Because it would be a mistake to then optimise to that last touch point, because you’re missing what really informed that higher level of intent [to subscribe],” he says.

“This is crucial to get a reader revenue business up and running at all: The reader must never change context during the conversion process. Not once; never.”



Magnus Engström, Head of Data Strategy, Mittmedia

These generate some 55% of all conversions, according to Head of Editorial Development Martin Jönsson. The model is semi-automatic – the algorithm flags a highly-performing article, but the editors make the final decision on whether to put it behind the paywall. Some publishers use this model in reverse, removing a paywall in cases where the content is under-performing in order to drive traffic.

The challenge: aligning many factors and messages

One of the most technically challenging aspects of driving digital subscriptions is getting customer journeys, promotions, marketing messaging and other customer communications aligned across systems as well as across platforms. The starting point is to be able to use your behavioural data in a one-to-one segmented way, combine it with data about usage of other products, demographic data, and, for existing customers, the unique ID.

Danish publisher Politiken has implemented Salesforce Marketing Cloud in order to be able to communicate in a coherent way with customers across their entire digital footprint. That is now possible, but each channel (pop-up windows, banners, Google, Facebook, and so on) still has to be set up separately. The publisher is now looking to buy or build a system from which customer journeys can be set up, and evaluated, from a single point – for all channels. We cover this project in detail in the Politiken case on page 32.

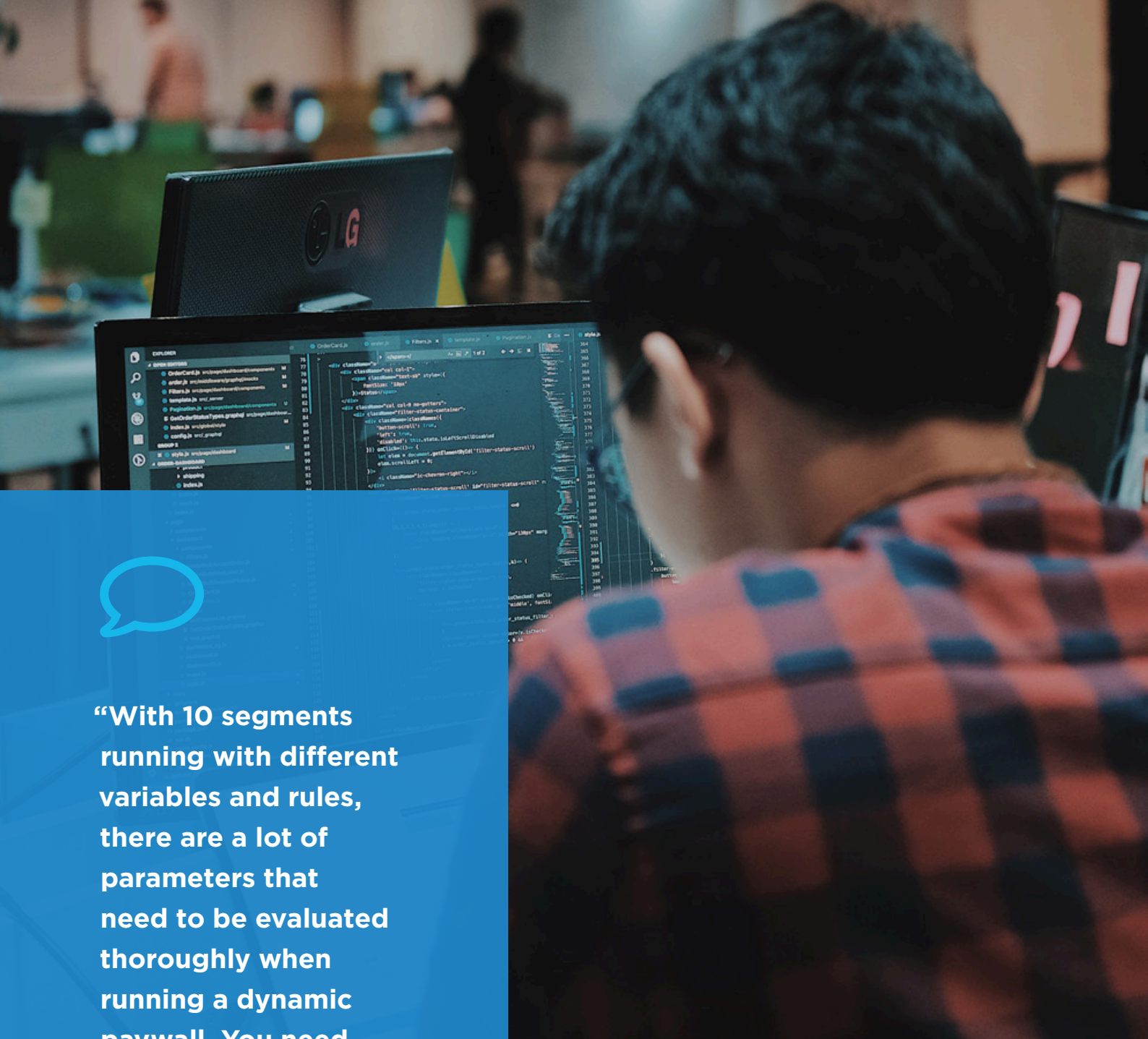
Unified customer model. In order to provide a coherent UX, it's particularly important that the management of the user data, including interactions, is consistent across the entire digital ecosystem. For example: If a publisher has built a propensity-to-churn model, a flag is “attached” to any customer in this category. This flag then needs to appear in all customer contexts – apps, websites, newsletters, KPIs, metrics, customer service – and it needs to signify the same thing across all.

Or in the case where articles are pushed out through push notifications and newsletters, you need to know how many times a customer has seen a specific article link and be able to set a rule that if they've come across it, say, four times without clicking, it should not be pushed out to that user again. These kinds of actions require a unified user model.

AI modelling on top. More and more publishers are employing data scientists, or engaging external consultants, to build AI models that then inform customer communications on factors such as propensity to buy, propensity to churn, customer lifetime value, suitable pricing on offers, and so on – driving efficiencies. In terms of customer lifetime value, the most complete picture would involve not just subscription revenue but also predicted pageviews and related ad revenue, though this may be too complex to achieve in step one.

Testing and optimisation

In digital marketing, being able to proactively test aspects of the customer journey is key to efficiency. Says Peter Gray, Vice President Product at Dow Jones, “Testing is critical to business success, especially for publishers, where it's not just direct customer relation-



“With 10 segments running with different variables and rules, there are a lot of parameters that need to be evaluated thoroughly when running a dynamic paywall. You need to have a person evaluate all the data. So the increase in conversions needs to match that effort.”

Jesper Johansen,
former Online Marketing Manager
Nordjyske Medier

ship actions that can be tested but also the impact of the content.” There are many optimisation solutions on the market, from fairly basic to very sophisticated, and it is important to work out at what level you want to begin.

Starting with the basics. For Swiss publisher Tamedia, which was already using Google Analytics, the obvious optimisation starting point was the free version of Google Optimise, with the possibility of upgrading to the premium version. “We did look at a top-end system, but for what our needs were, it would not deliver value for money,” says Jonas Wendler, Head of Data Insights

& Analytics, Digital Paid Media at Tamedia (see box “Testing: Linking to goals set in Google Analytics,” at right).

Optimisation systems: some aspects to consider

Flexibility. Features you might want to be able to test include pricing and paywall, funnel optimisation, promotions, personalisation and content optimisation. According to some publishers, some systems in this category promise more than they can deliver in terms of complexity of implementation and ability to freely test various designs of marketing messages and so on. You’ll want to talk to peers to get to the bottom of what’s doable.

Traffic volumes. Your speed of testing will be hampered/accelerated by the amount of traffic you get through the assets you’re testing. Some of the more high-end systems require a lot of traffic to yield ROI. If you’re just starting out, you may not need that level of sophistication, and might want to consider cheaper alternatives.

Back-feeding results. Feeding test results back across platforms is not easy in practice. Let’s say you’re A/B testing two headlines in desktop. The winning headline would then display in the browser through your client-side tool, but you somehow need to get it matched with the article in the database to be able to display it in the app, for instance. Or if you did separate tests on desktop, the app, and the mobile web, you would have three different tests with two variants. Subsequent analysis would then have to include all those factors.



Jonas Wendler
Tamedia

Testing: Linking to goals set in Google Analytics

Tamedia’s Digital Paid Media team uses the free version of Google Optimise. The team, managed by Head of Data Insights & Analytics Jonas Wendler, educates journalists and editorial teams and also acts as the group’s chief editors’ marketing team. “For us, Google Optimise has the huge advantage of linking to Google Analytics, which we also use. We can set up tests easily and then connect them to any Analytics goal that we’ve already pre-defined – we just select it. This way we also have the advantage of always using the same goal when we look at paywall conversions, for example.”

Tamedia has used the basic Google Optimise version to do A/B testing of content, test CTAs and test the check-out flow, including skipping steps, different bundles, and review of pricing aspects. “Most of the tests we’re running are relatively simple... But we will likely move to the paid version soon. For us the big advantage of implementing the premium version is the ability to use Google Analytics segments, that is, to hone in on users who are already identified as having propensity to buy, risk of churn, etc.”



Politiken: In the middle of a major technical overhaul

From data lake with AI models to one-stop customer journey set-up

A year or so into the implementation of Salesforce at Danish Politiken, it was becoming increasingly clear that they were facing a fundamental issue. While the system was not made to manage data from several data sources, access to solid data was absolutely critical in order to leverage its capabilities. And with a plethora of legacy systems generating data in as many different formats, the solution became obvious: start with the data.

The in-house built data lake is now nearing completion, will include AI modelling and will enable significant efficiencies in marketing and customer journey management, inline with its broader subscription strategy.

Denmark's top quality paper, Politiken, is staking its future on its subscribers – print and digital. And at €40 a month, Politiken's digital subscription has one of the highest price tags in Europe – so engagement and retention sophistication is key. For this reason, there's a real sense of urgency in getting the heart of the business beating solidly. The data lake, being built by and for the entire JP/Politiken group, needs to be operational by the end of 2020.

“We have so many ideas around actions to drive engagement and retention,” says Politiken Customer Director Johanne Holm. “Today, we have a fairly reasonable ecosystem with great agility and not much redundancy. The challenge is, however, that we are using Salesforce in a way that is not intended, which results in severe unstructured data formats. It would be much easier if all data is sent to the data lake in structured formats, as it is easier to work with, and we can combine data and enrich data from other data sources as well. Salesforce is a marketing platform, not a data repository. That's

why our data lake needs to be completed as soon as possible.” (Politiken is using only Salesforce Marketing Cloud, Salesforce does offer data solutions as well – but Politiken decided to build its own.)

Salesforce – no data, no dice

Politiken invested in Salesforce Marketing Cloud over three years ago. At that time, the analytics department had started tracking users' behaviour on Politiken.dk, but was not really able to leverage the information beyond tracking the number of people visiting the site. In order to use the data in a more segmented way, it needed to be incorporated into Salesforce on a one-to-one basis and to be combined with other customer data, including gender, age, customer history, digital behaviour on e-paper, podcasts as well as all the product data.

“We underestimated the effort involved in getting Salesforce to a point where we can fully leverage its functionality. Getting all our data into Salesforce and then building all our flows has required huge amounts of time and resources. It's taken us almost three years to where we can now use it in a meaningful way,” says Holm.



Johanne Holm,
Customer Director,
Politiken

The decision to invest in Salesforce stemmed from a desire to communicate in a coherent way across all channels, based on customers' complete digital (and analogue in terms of customer services and telemarketing) footprints.

"Today we are able to coordinate the messages in personally segmented emails, pop-up windows and banners, questionnaires, etc., based on the customer's behaviour, and engage customers across channels with the most relevant reader promises." (For more about Politiken's Reader Promises, see the box on page 36.)

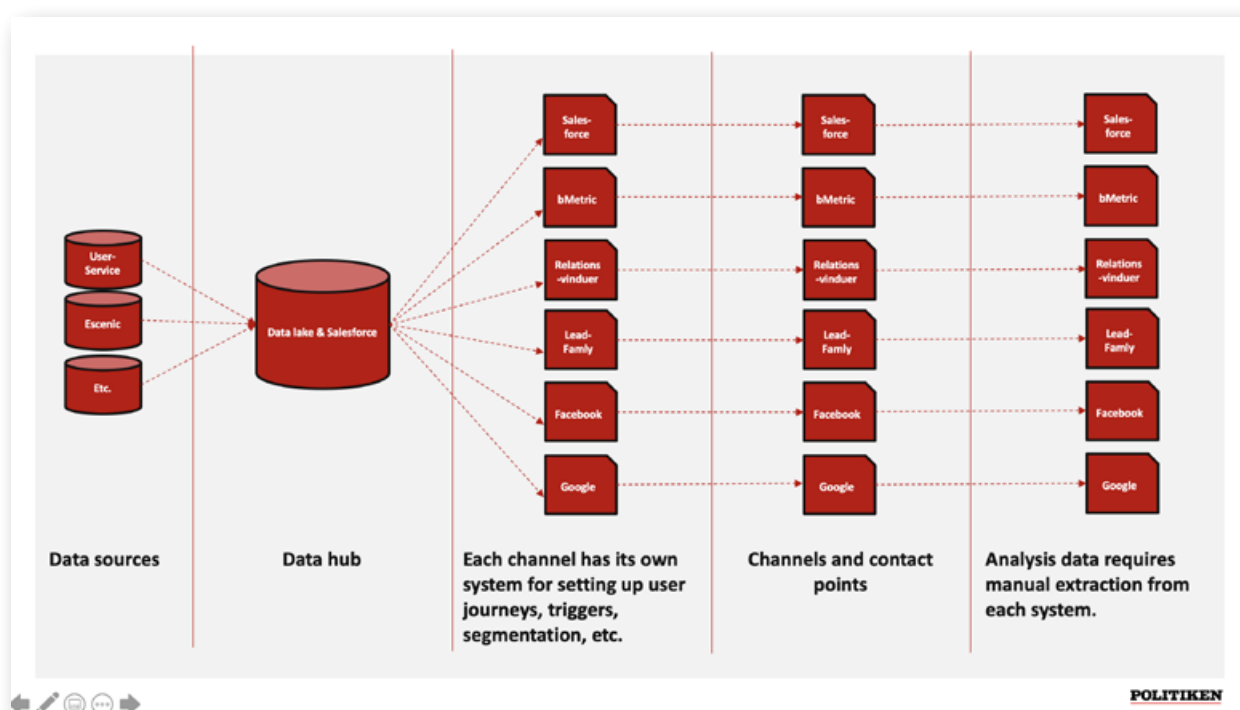
However, as mentioned, while Salesforce is effective at using data, it's not built to manage or store it. Add to that the challenge (which Politiken shares with most of its peers in the news industry) of leveraging data from numerous legacy systems, in native formats, in an effective, consistent and predictable way. It became clear that a meticulously structured central data repository was going to be absolutely critical for the business.

The data lake – a single source of truth

JP/Politiken took the decision to build an in-house common data lake for the group. Politiken Digital Director Troels Jørgensen emphasises the importance of the in-house aspect of data management for publishers. "You have to build your customer data platform yourself... Own your own data, host it and have proper governance in your organisation. You have to be in full control."

As well as being a central repository for business intelligence, the data lake is also in effect the route to integration of all the underlying legacy systems. The data team has defined rules on how data from various systems must be sent to the data lake (and received by it), including factors like format, frequency, structure and whether the data point requires a definition.

"Thanks to the unified data specification, we can be sure that any data in the data lake is correct, always the truth and structured in a way which lets us use it for both marketing and communication and – key – subsequent evaluation." says Holm.



2 technical slides of data flows: **Before** (above) and **After** (opposite) a Single Interface for customer journey set-up ...

The group that drives the data lake implementation consists of JP/Politiken's IT director, Johanne Holm and her peers at sister titles Jyllands-Posten and Ekstra-Bladet being responsible for their data sets. There are also dedicated staff at each title working solidly with the data transformation.

Coming 1: single point of customer journey set-up

With a central data lake, all data generated across all systems is combined and informs the set-up of Politiken's customer journeys and associated messaging.

"Today, when we create user journeys across our channels, they have to be set up in several channels," says Holm. "It requires a lot of manual work, is not very agile, and it is incredibly difficult to get a comprehensive overview of all the users journeys running, as well as gather evaluations of the various activities. (Salesforce, banners, Facebook, Google, bMetric

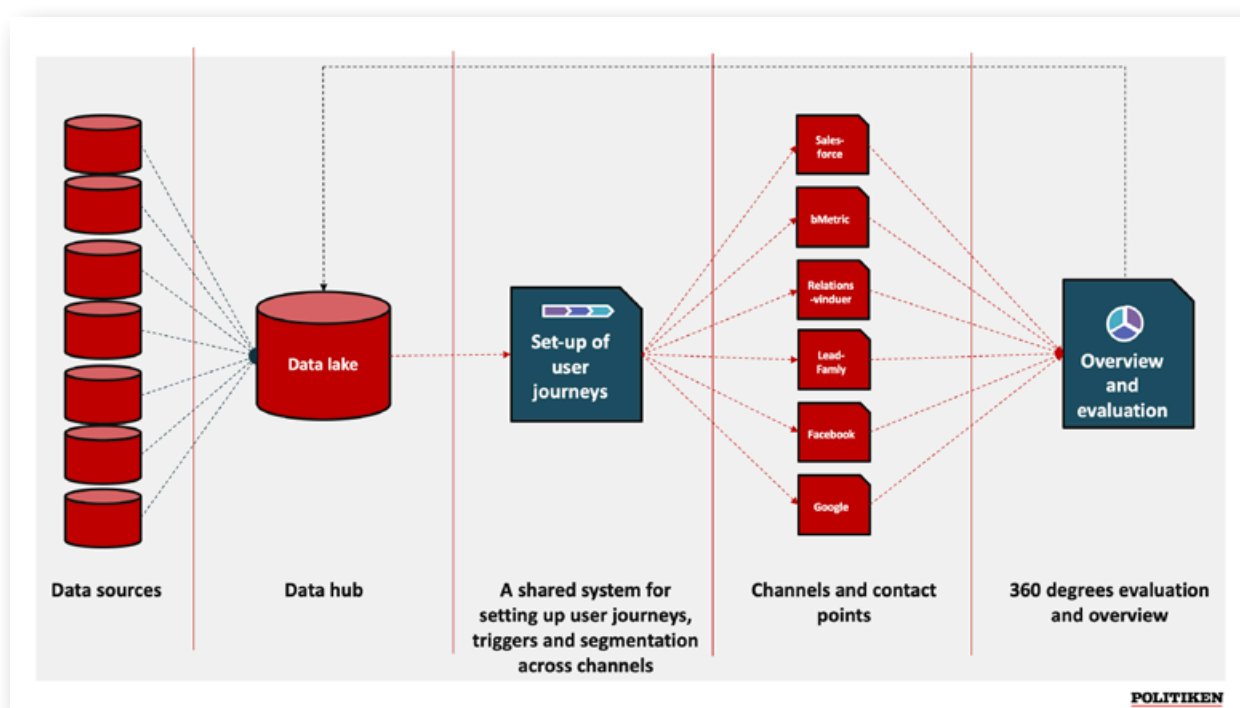
pop-up windows...). Plus, if we were doing A/B testing of messaging, you'd have to do it twice in each channel.

"Politiken's plan is to either buy or build this single interface solution (see illustration)," Holm continues, "however, we haven't decided yet, as we still need to define our requirements. It would be a lot easier to buy if possible, as you don't need to continuously develop and up-grade in-house. But if you build it yourself you have to make sure the people who build it can actually transfer all the information to subsequent teams who take over, otherwise you're really vulnerable."

Coming 2: AI models

In order to gain further efficiencies in marketing and retention efforts, Politiken is also working at incorporating AI modelling in the data lake. "Today we're only looking at conversions – we know how many customers a campaign produced. But this is not a perfect picture, all customers are not equal from a business point of view."

Politiken is working with US consulting firm Mather to develop AI models for churn prediction, customer life-



time value (CLV), acquisition offer pricing and market based pricing.

This paradigm shift has its own set of challenges. “As our data has not been structured to a common standard, we’ve had to spend more time than we’d calculated to prepare data and explain our business to the Mather consultants,” Holm said. “Another issue has been the legacy systems. We’ve moved our customer and product data from Infosoftware to Bordas and now it’s going into Zuora.”

Once the algorithms are in place, Holm’s team will be able to segment customers based on predicted behaviour. “When we decide on campaigns next year, hopefully we’ll be able to determine which groups to target based on propensity to subscribe, prediction on durability, willingness to pay and their calculated life time value. As well as in relation to the acquisition cost – some campaigns might not be profitable if the customers are expensive to acquire and simultaneously not staying for a long time.”

At the moment, Politiken is only aiming to include subscription revenue in the CLV model, not the advertising revenue generated by a subscriber’s pageviews. “It’s currently too complicated to include both, as we’re still in the process of extracting data from multiple systems. It’s possible that in a year or two, once we’ve completed the data transformation process, we’d be able to create a more complete CLV model.”

In many ways, Politiken’s technical challenges related to the digital subscription business are very typical for our industry. There are numerous legacy systems from which to untangle yourself while at the same time there’s a real urgency in being able to execute on automated marketing today. While there are thousands of individual company scenarios, there seems at least to be one universal truth: Future-proofing your digital subscription business begins with getting your data in order.

Politiken’s Reader Promises

In 2018, a couple of years after the shift from a metered to a freemium paywall model, Politiken’s editorial and marketing teams started to formulate thoughts on Reader Promises as concrete manifestations of the value of a Politiken subscription. Today, many of these are in place – with more to come. Crucially, the entire customer journey is now built up around these promises, and the main objective is to get new subscribers to really engage with them within the first 100 days. The 100 Days Programme includes emails, banners and feeds promoting e.g. the news app, editorial newsletters, the Plus membership club (discounted goods & services) and the daily podcast.

Customer Director Johanne Holm wanted to know whether it was possible to see a correlation between the use of Reader Promises and loyalty. “We made the assumption that using more Reader Promises would increase a customer’s loyalty – but could we illustrate it in some way? And which promises work better?” She took her query to the Analytics department, who developed the Use of Reader Promises Matrix.

Udvælg læserløfter

☒ Podcast +50
 ☒ E-gavis +1.581
 ☒ Gem +783
 ☒ Politiken.dk +845
 ☒ Nyhedsbreve -223
 ☒ Nyheds APP +1.262
 ☒ Særdugjvelser +3.699
 ☒ Del +209
 ☐ Politiken Plus
 ☒ Live +40

LÆSERLØFTER LOYALITET KOMBINATION



Along the top: Reader Promises, you can include/exclude by ticking. There are different conditions on each promise, e.g. podcast: “listened in the last week, yes/no,” e-paper “read in last week, yes/no,” Politiken.dk and newsletters “visited / read in last day, yes/no,” and so on.

X-axis shows the number of Reader Promises used, **Y-axis** represents loyalty – customers at 5 or 6 generally don’t churn. You can choose whether to show just Reader Promises, Loyalty or a combination of both. You set two dates to compare; red dots indicate the number of users have declined, green increased.

In the example here; **the two big red dots** at the top left are loyal readers, but they are not using many Reader Promises. Holm’s team would then get these readers’ data in a CSV file and use Salesforce to communicate with them appropriately.



Why we sponsored this report

Over the past few months, the whole world has adapted to doing things differently. Inevitably, this change also affects how the media create, edit and publish, and how the audience accesses information.

It is time for the media to develop a **digital business philosophy**. In this sense, the tools that will make this **digital transformation** a reality are essential to achieve successful results. In terms of software, relying on **solutions that offer functionalities developed specifically for the media** business will make the difference.

Currently, the media need to have functionalities that enable the implementation of effective actions to increase the **loyalty of their audiences** and, ultimately, get and **keep subscribers**. Here are some of the most relevant ones:

- **RFV score** analysis: capable of calculating the value of visitors through a score that takes into account the freshness, frequency and volume of visits of each user.
- Content recommendation based on visitor habits, both by affinity and by theme.
- **Content personalisation** based on the device used, the segment of the public to which they belong, their geographical location or even the day of the week.
- **User profile** where registered users have the possibility of accessing a record of their **favourite articles**, articles they have saved to read later and to track content by subject, trend or preferred authors.

- **Sending personalised PUSH notifications** that capture the user's immediate attention and get into a reading habit.
- Configuration of different types of **paywall** according to the audience segmentation defined through the RFV score and based on an audience **loyalty strategy**.

We appreciate the opportunity from WAN-IFRA to sponsor this Tech Reader Revenue Report, as it is important for us to be part of the reader revenue conversation. In the current and future context, tools are the basis for media to monetise their digital content and audiences. Digitisation has become a key issue for publishers and audiences worldwide, so the focus must be there, on the way forward to increase **digital revenue**.



About Protecmedia

Protecmedia is an international company specialised in software development and consultancy for the media. We have more than 40 years' international experience, with over 500 clients in 30 countries around the world.

As technological partners, we accompany our clients in their digital transformation. Through innovation in technologies and intelligent services, we make the work of publishers easier and improve their productivity.



About the Author



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**CMO, United Robots
Sweden**

Before joining United Robots last year, Cecilia worked in the core team of WAN-IFRA's executive programmes on digital revenues from inception in 2006 to 2019, where she set up and participated in hundreds of hours of meetings with publishers around the world, discussing reader revenues. She has written numerous articles and reports on the topic, and authored most of this report before joining United Robots.

In her role at United Robots, she advises news publishers on how to leverage robot journalism in future-proofing their publishing business by extending and improving the journalistic product and growing revenues while at the same time freeing up editorial resources.



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