

INDUSTRY REPORT

BUILD OR BUY IN VIDEO STREAMING

State of technology procurement in OTT

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Methodology

Why is video streaming technology important?

The market for video streaming technology is rapidly growing and already accounts for about \$1 billion in annual spend on online video platforms (OVPs) and a further \$3 billion on components and modules used to build video streaming platforms alongside in-house development, according to Caretta Research.

The drivers for this market are critically important to understand how this opportunity is developing. Of particular interest are the drivers for building technology in-house, buying in parts of the stack from vendors, or buying in an entire stack. The push-and-pull of considerations, products and features and how they impact buying decisions to build or buy video streaming technology is the focus of this report.

How has this report been created?

This report is based on a survey on online video platforms and streaming technology conducted

Total respondents

273

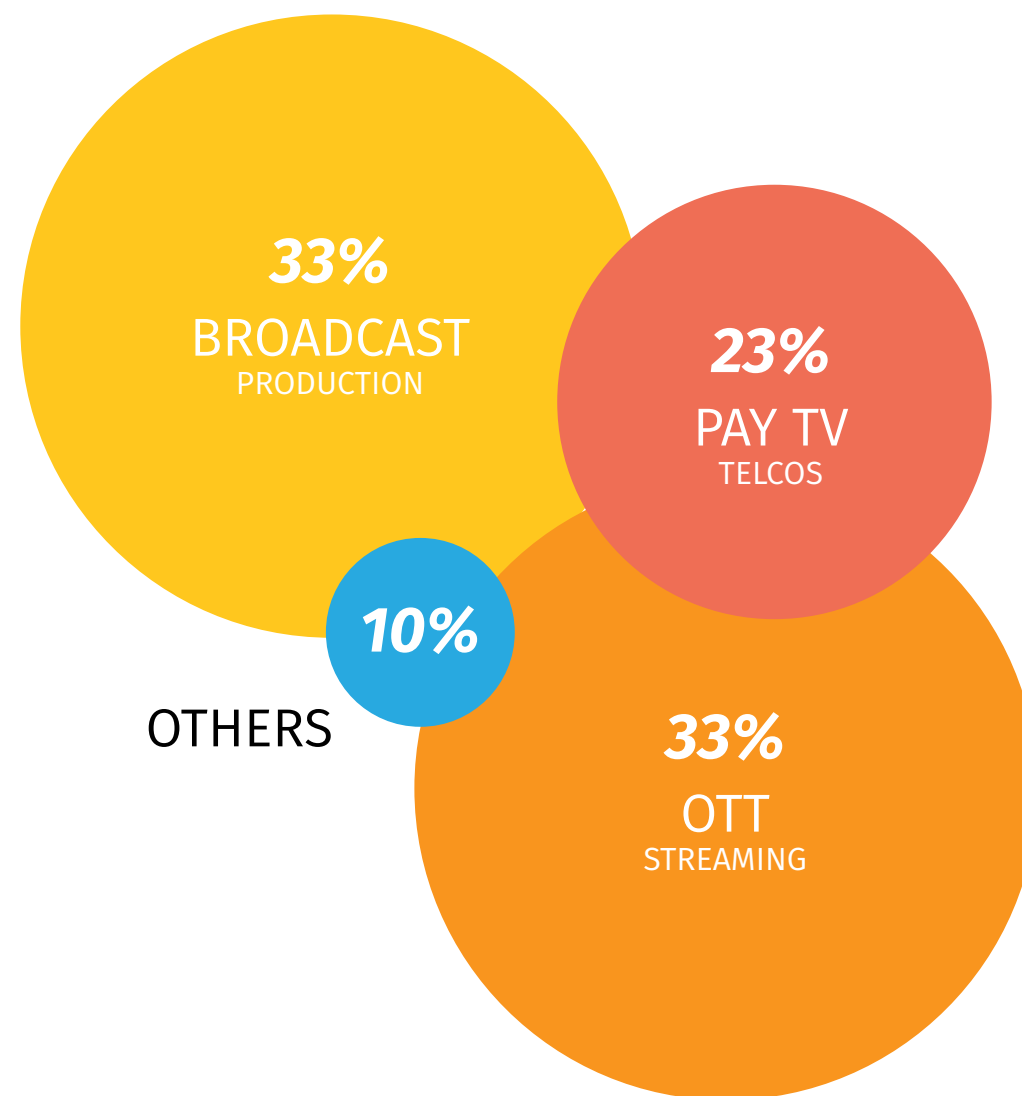


in August and September 2022. The sample includes 273 respondents in total and the analysis focuses on qualified tier 1 and tier 2 technology buyers in the broadcast and media industry, primarily online streaming platforms, telcos and pay TV operators, broadcasters and channel groups.

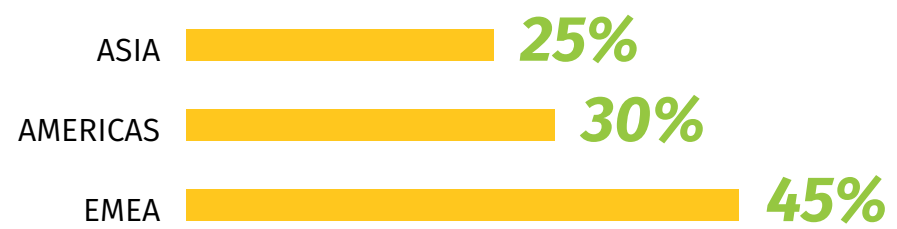
Around 60% of respondents were executives, 25% were developers and 15% were in product and marketing roles. Geographically around 45% of respondents were based in EMEA, 30% in Americas and 25% in Asia-Pacific.

Additionally 10 direct interviews were conducted with executives, product managers and decision makers at tier-1 broadcasters, online streaming platforms and pay TV operators in Europe and North America.

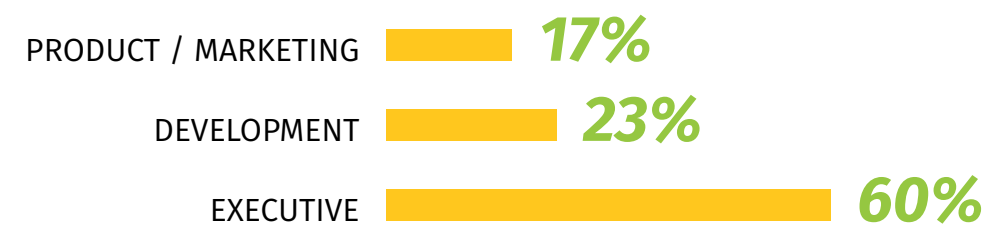
Primary place of work



Headquarter location



Main Role





KEY FINDINGS

Buyers Want Flexibility and Customizability

79%

use multiple vendors or both vendor and in-house development when deploying technology.

76%

customize their deployment, either with a vendor or in-house.

63%

said **customizability** or **integrations** are the most important technical considerations when deciding which video streaming technology to source.

We did everything in-house, we hired hundreds of developers for several years to make exactly what we wanted. Now that we really know what we need we start looking at vendors again.

- European Pay-TV platform



Buyer Decisions to Procure Products are Driven by Cost and Control

1

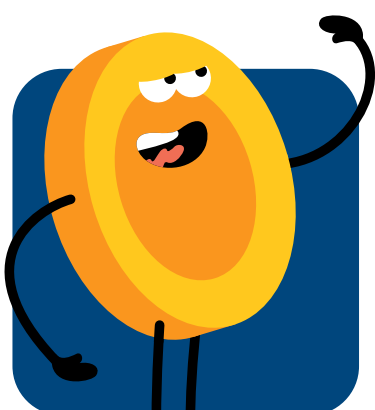
The preferred ways to acquire technology are through **open source** development and **pay-as-you-go** products.

2

Cost is the top commercial concern, followed by **avoiding vendor lock-in and dependency**.

3

Controlling the development roadmap is the top reason to bring development in-house.



In the procurement process, we score on cost, technical competence or capability slash experience, which includes if you've got skilled staff to be able to deliver the project.

- European broadcaster

Build or Buy Approaches Tend to Apply to Different Parts of the Technology Stack



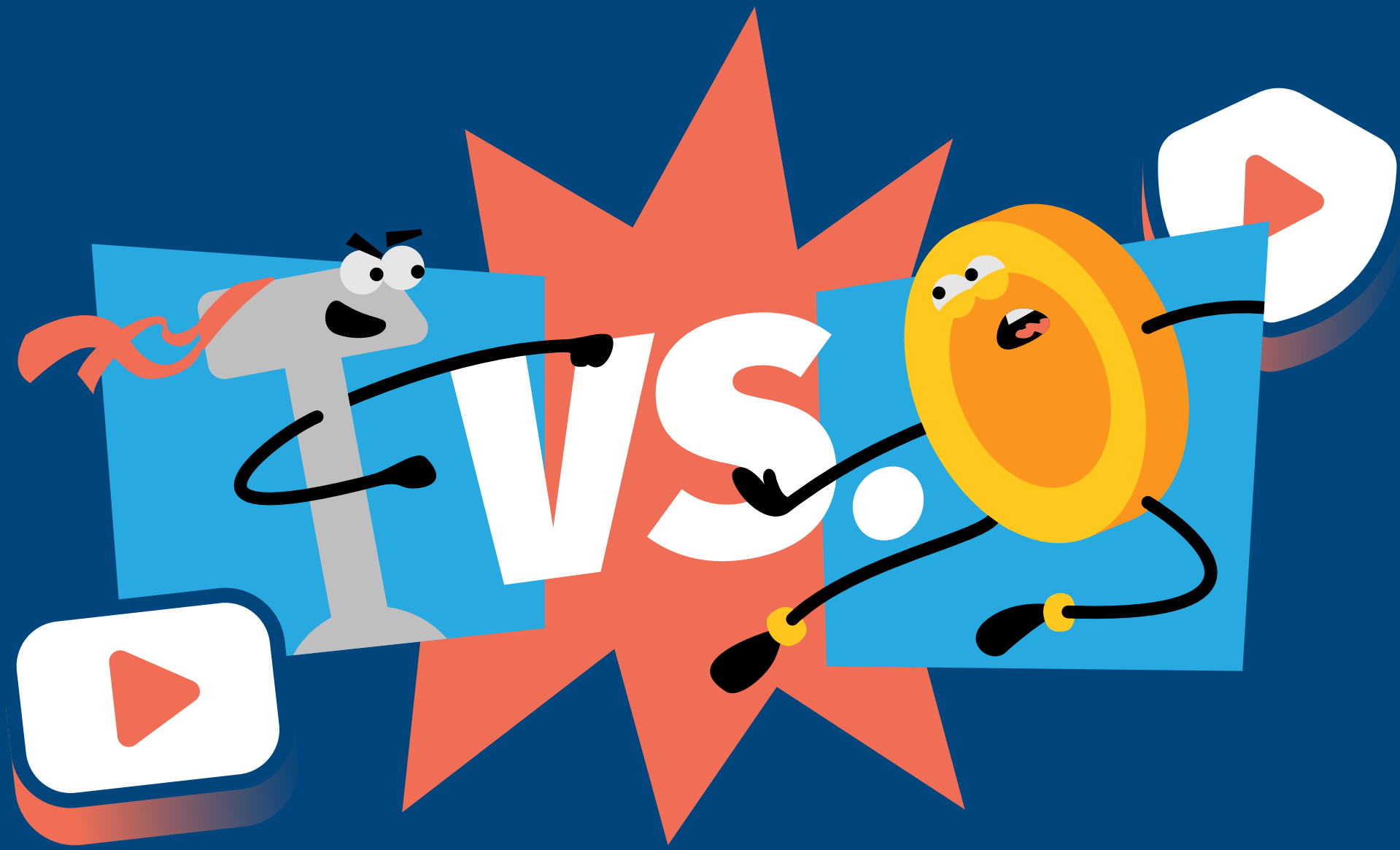
Components that differentiate the user experience such as **apps** and **personalization, metadata, platform API** and **ad tech** are the most likely products to build and the most likely to be upgraded.



Commoditized processes such as **encoding** and **DRM** are the most likely products to buy and the next most likely to be upgraded.



Business systems such as **entitlement** and **monetization** products are a mix of build and buy, and are the least likely to be upgraded.



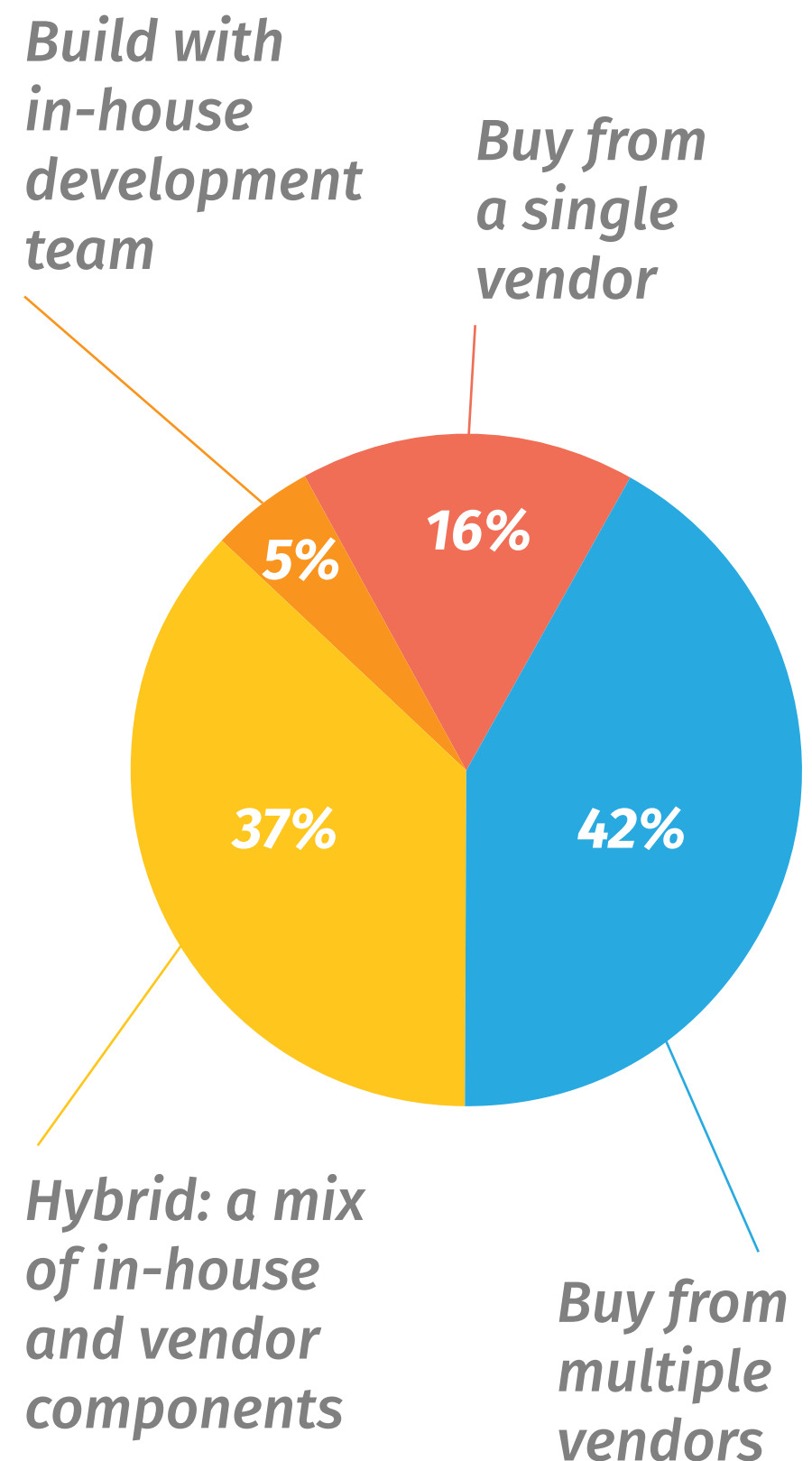
BUILD OR BUY

**How buyers decide to build and buy
video streaming technology**

How Companies Build or Buy Video Streaming

Most buyers rely on vendors to provide products and technologies. There are also relatively few buyers using only a single vendor and the majority work with multiple vendors — of which around half have a hybrid strategy using a mix of in-house and vendor components.

- Over 40% of technology buyers currently use an in-house development team in their video streaming deployment.
- The other 60% just buy technology from vendors and do not have an in-house development team.
- Buyers also strongly prefer using multiple vendors, often taking a hybrid approach with in-house development.
- Relatively few buyers use a single vendor, and those that do often just use the product as it is rather than customising the technology.



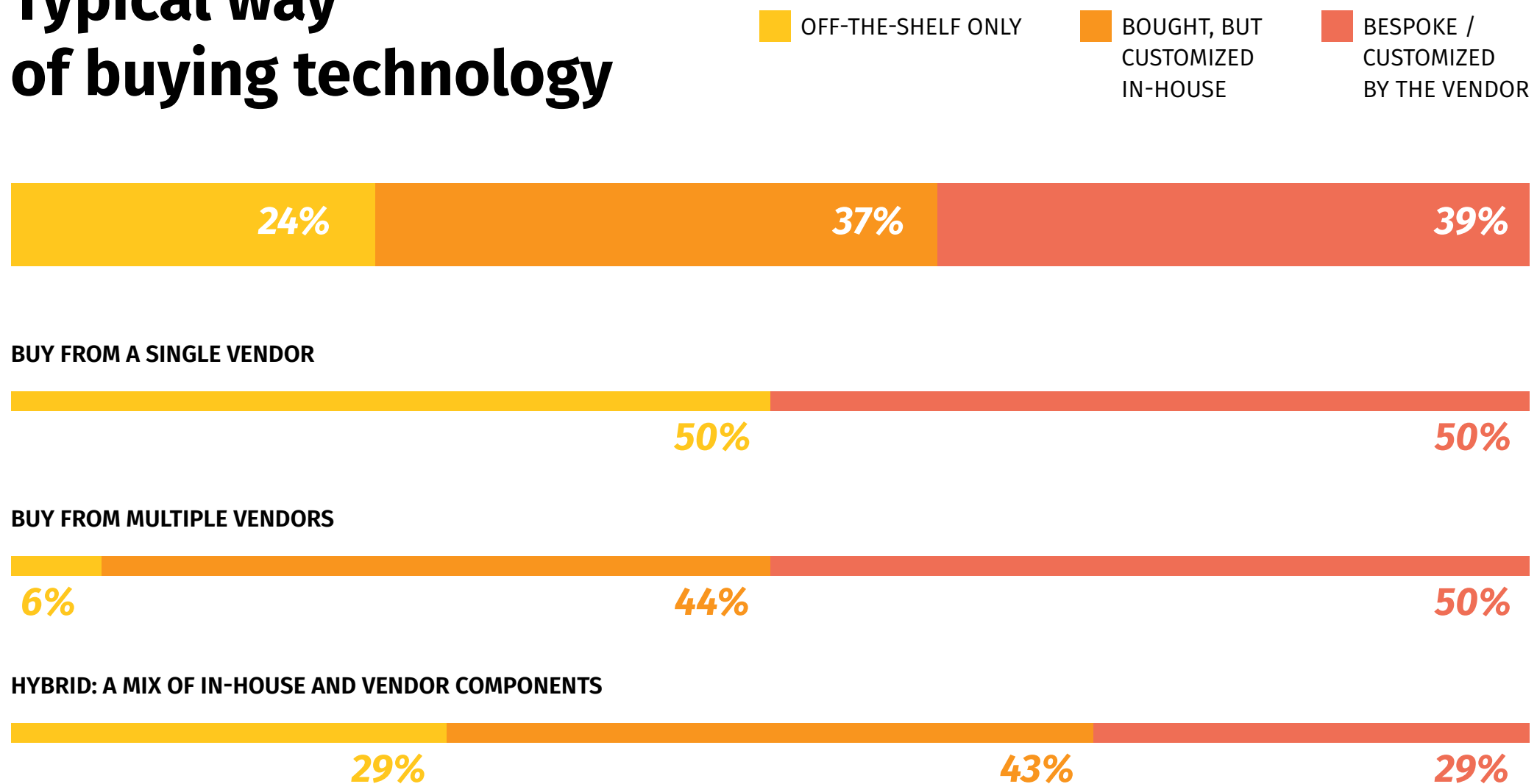
How Companies Customize Technology

Over three-quarters of deployments involve some level of technology customization. This is broadly split between customizing in-house and customizing with the vendor.

in-house and vendor components. This was associated with a fairly even split between off-the-shelf, in-house customized and vendor customized technology.

- There is a relatively small proportion of off-the-shelf technology deployment — over 75% of deployments are customized by the vendor or by the in-house development team.
- The most popular strategy to source technology is a hybrid approach, mixing
- Deployments using multiple vendors are customized over 90% of the time.
- Most buyers using vendor products off-the-shelf are buying from a single vendor or are using select components off-the shelf as part of a hybrid deployment using in-house and vendor components.

Typical way of buying technology



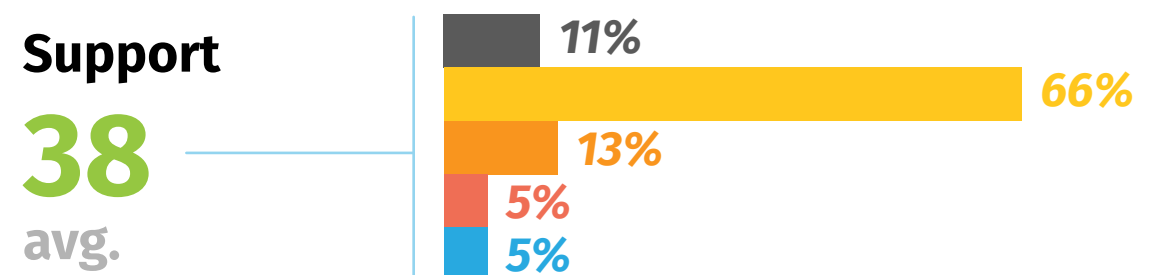
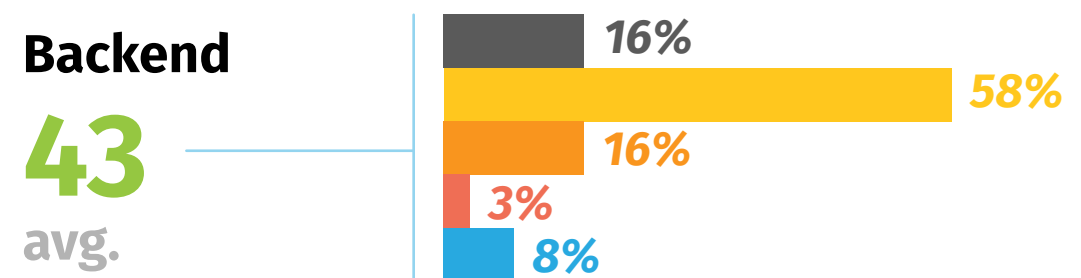
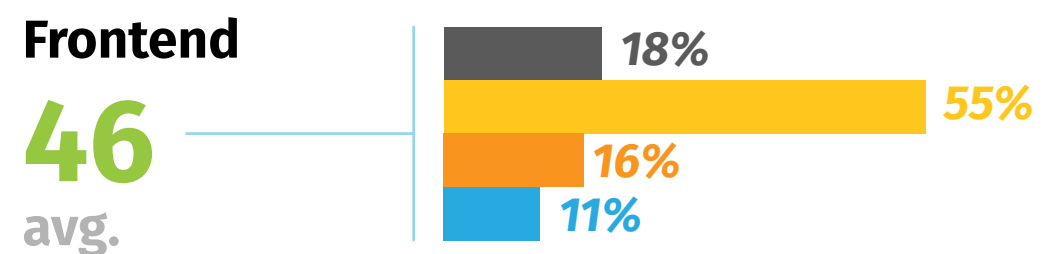
How to Build: In-house Development Strategies

In-house development is a key component of buyer technology strategy. While few companies opt to build their entire platform using in-house developers, there are several use cases for these teams including frontend development, backend development and support and maintenance of the existing stack.

Frontend teams focus on the apps and UI/UX. Backend teams focus on CMS, encoding, asset management, metadata and security.

- Almost 90% of companies have an in-house development team for support and maintenance, while between 80-85% have frontend and backend teams.
- Around 70% of development teams for frontend, backend or support are fewer than 50 people and just under 90% of teams are fewer than 100 people while around 10% of teams are over 200 people.
- For companies with support and maintenance teams, the average team size is around 38. Frontend teams tend to be the largest with an average of 46 people.

In-house developers for online streaming technology



BUILD OR BUY

Not all development teams are focused on the same things — and this fits with the evidence that most in-house teams are primarily working on support and maintenance, while relatively few develop complete in-house builds.

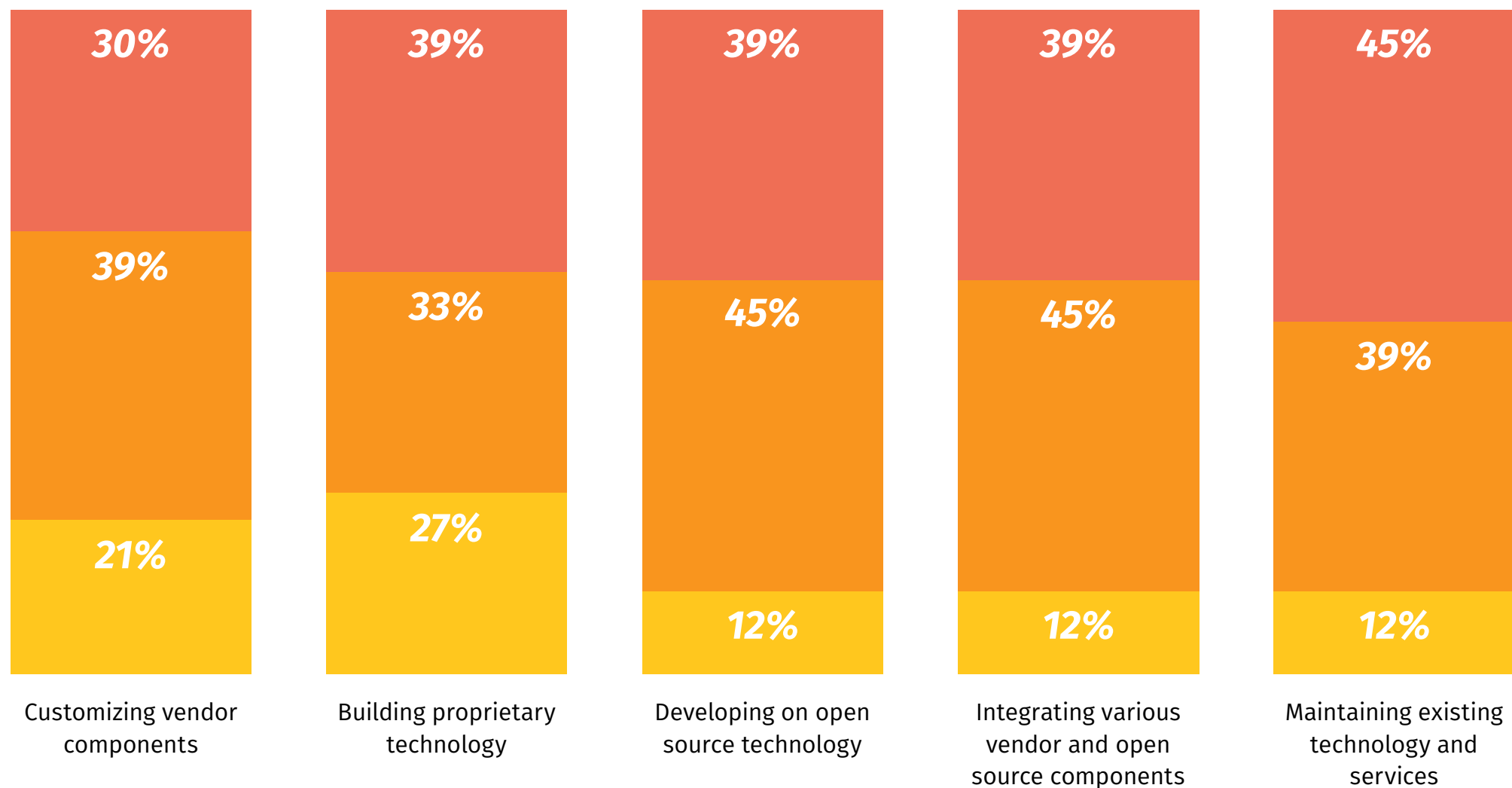
- The main task that in-house developers focus on is maintaining the existing technology and services stack.
- The second most common tasks is integrating vendor and open source

components and developing on open source — this is very closely aligned with the hybrid approach.

- Relatively few developer teams focus on building proprietary technology or customising vendor components, although both are infrequent tasks that make up a small part of development time, most typically providing in-house components rather than building a full in-house stack.

What is the focus of your in-house development team?

■ MOST OF THE TIME ■ SOMETIMES ■ NEVER



How to Buy: What are the Key Drivers

There is a very clear priority in deciding to build components and technology in-house — control of the roadmap. Other drivers such as editorial workflow, metadata structure, control of UI/UX and monetization are lesser factors.

Control of the development roadmap means that buyers are able to prioritize their own requirements and features in the build of their consumer services.

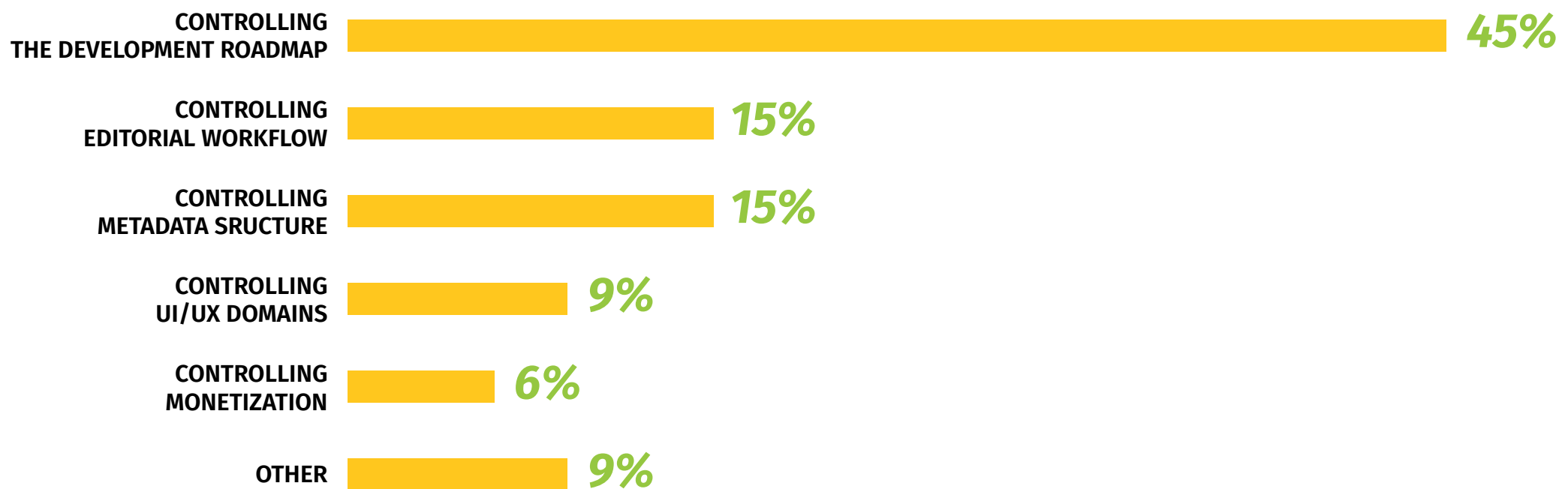
Controlling the roadmap exerts a strong pressure on buyers to build out sufficient in-house development capabilities to take control of decisions where necessary.

There are lots of specific factors in our country which international vendors don't always appreciate or understand.

- Asian Pay-TV platform

Quotes are anonymized to protect identity of respondents

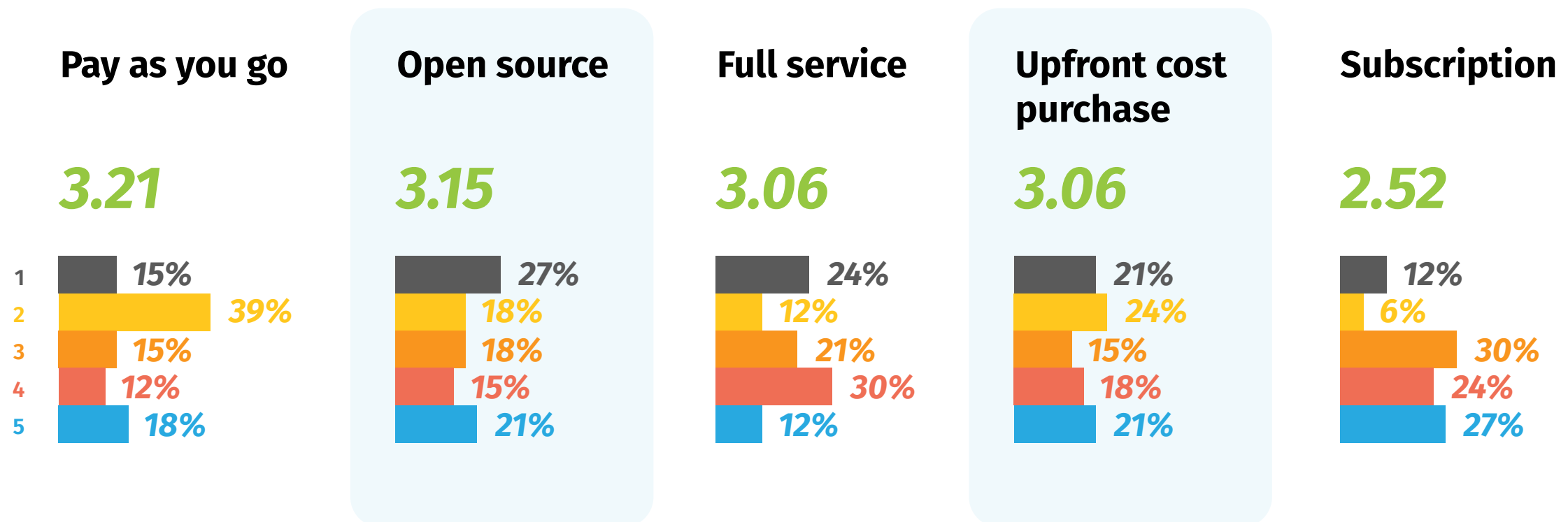
Drivers to build (rather than buy)



Preferred way of buying technology

(ranked from 1 (high) to 5 (low))

WEIGHTED AVERAGE RANK



Pay as you go and open source are the most preferred choices. Buyers often had quite different behaviors based on how they preferred to buy technology.

are more likely to use a single vendor, but less likely to do in-house development as they tend to have smaller development teams which often focus on support and maintenance.

- Buyers with a high preference for **pay as you go** technology are much more likely to use hybrid in-house development, do a lot more vendor integration and open source development and tend to have larger development teams.
- Buyers with a high preference for **open source** tend not to use single vendors.
- Buyers with a high preference for **full service** are more likely to use a single vendor, but less likely to do in-house development as they tend to have smaller development teams which often focus on support and maintenance.
- Buyers with a high preference for **upfront cost purchases** tend to have larger development teams and are more likely to build proprietary technology in-house and focus on time-to-market.
- Buyers tend not to have a high preference to buy **subscriptions**.



PRODUCTS | FEATURES

What products, features, and considerations drive decision making

Sourcing and Upgrading Video Streaming Technology

Plan to upgrade

■ MOSTLY WITH VENDOR ■ MIX IN-HOUSE AND VENDOR ■ MOSTLY IN-HOUSE

15%

Entitlement

Check consumers have access to the right content and services.

47%

Content protection & DRM

Directly or indirectly provide security to the video stream and content.

53%

Video and metadata management

Manage and organize the video assets and metadata associated with the video.

27%

Monetization

Manage different commercial models such as advertising, subscription or transactional.

53%

Ad tech

Allow for ad targeting and insertion into or around the video stream.

60%

Platform API / middleware

Manage integrations between the components of a platform.

40%

Encode and packaging

Encode, transcode, create ABR ladders and DRM packages for live or VOD content.

53%

Personalization & recommendation

Select content and adapt service offering based on user or usage analysis.

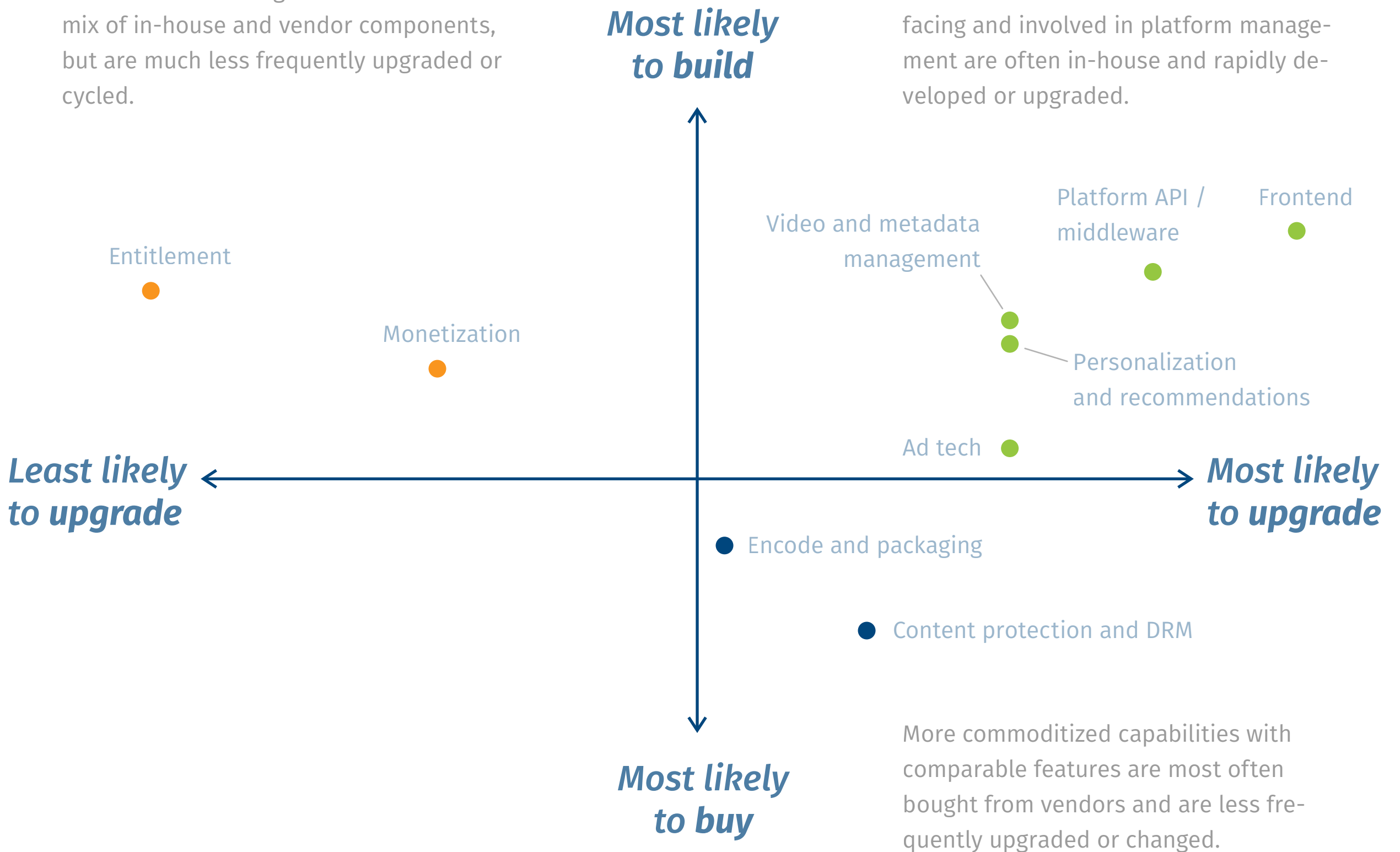
67%

Frontend

Build and manage the apps and UI/UX design elements within the app environments.

PRODUCTS | FEATURES

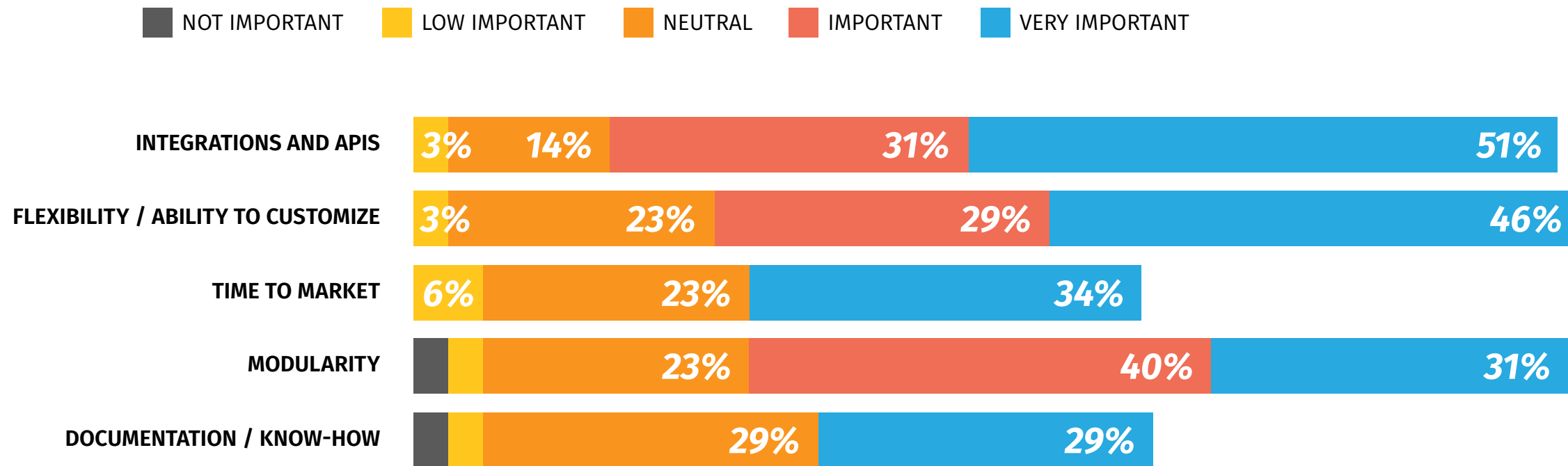
Core business management tools are a mix of in-house and vendor components, but are much less frequently upgraded or cycled.



Sometimes I just don't have enough information about my vendors – I want more usable information on products and offerings, more discussion of our strategy and needs.

- Asian broadcaster

Most Important Technical Considerations



Technology considerations are some of the key drivers of decision making for buyers. These are ranked by weighted average below:

1. **Integration and APIs** (most important)
2. **Flexibility / ability to customize**
3. **Time-to-market**
4. **Modularity**
5. **Documentation / Know-how** (least important)

Integration and APIs and **flexibility / ability to customize** both draw on the need to do some amount of in-house or vendor-led customization, and relate

to the need to control the product roadmap.

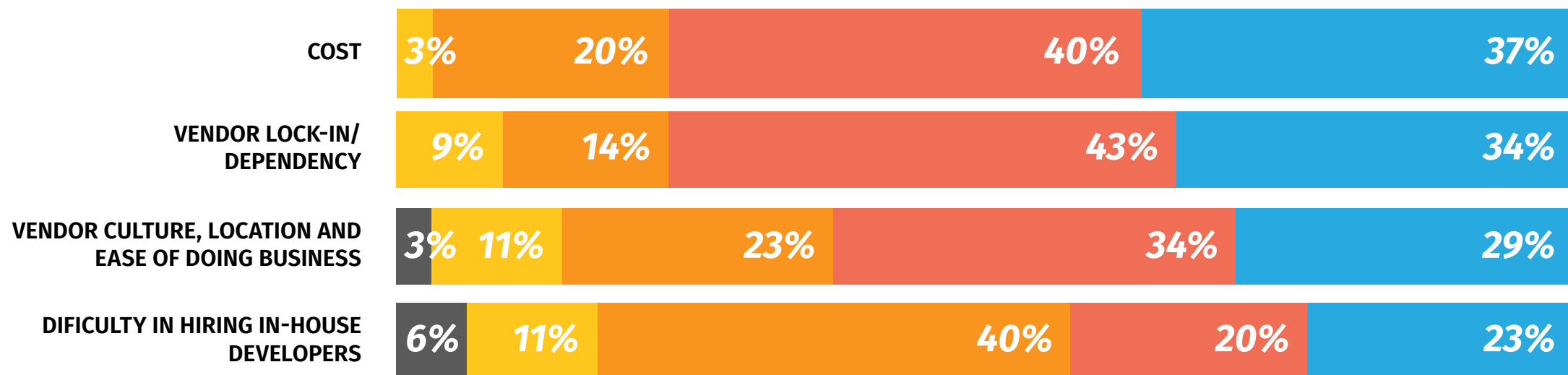
Time-to-market is very important for many buyers, but much less important for others. Companies that ranked time-to-market as very important were much more likely to customize in-house and build proprietary technology.

Modularity is widely considered to be important or very important to buyers and drives a lot of vendor selection.

Documentation / know-how are relatively less important than other considerations. Buyers prioritizing these considerations tended to use multiple vendors and customize with the vendor.

Most Important Commercial Considerations

NOT IMPORTANT
 LOW IMPORTANT
 NEUTRAL
 IMPORTANT
 VERY IMPORTANT



Commercial considerations are the other main set of drivers for buyers. These are ranked by weighted average below:

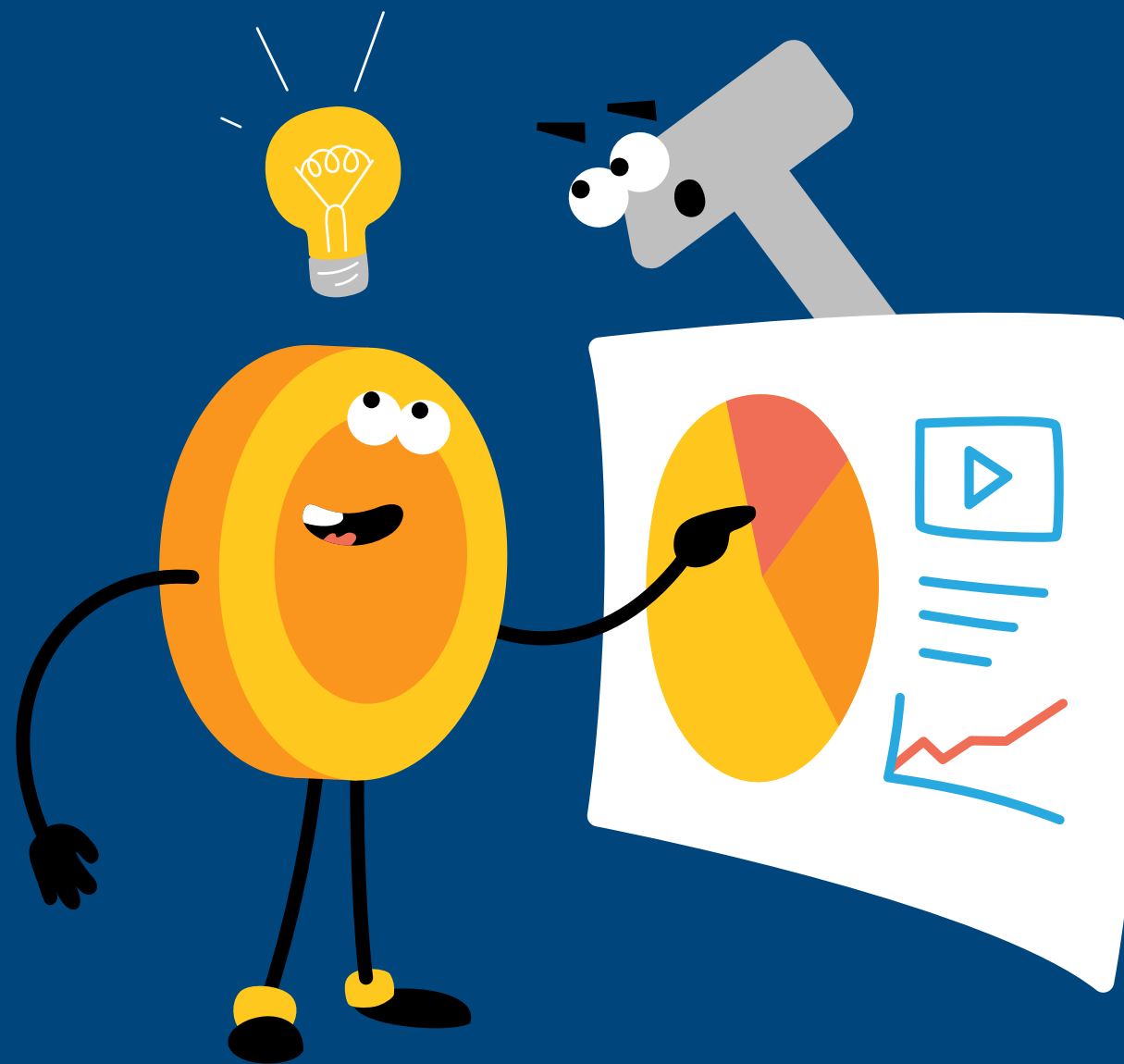
1. **Cost** (most important)
2. **Vendor lock-in / dependency**
3. **Vendor culture, location and ease of doing business**
4. **Difficulty in hiring in-house developers** (least important)

Cost is the most consistent commercial consideration from buyers, and this was expected. If the product is outside of budget then it's not going to

get approved regardless of other considerations or features. This held across all buyer types.

Vendor lock-in / dependency is very closely matched to cost in terms of weighted importance. This was extensively validated in the focus group interviews and the buyer concerns for flexibility were often more about working with the vendor and the vendor's roadmap than specific technical requirements or ability to customize.

Vendor culture, location and ease of doing business and **difficulty in hiring in-house developers** are both moderately important but didn't tend to identify a specific type of company.



DECISIONS | PLANS

How buyers decide to evolve and update their video streaming technology

Plans to Upgrade

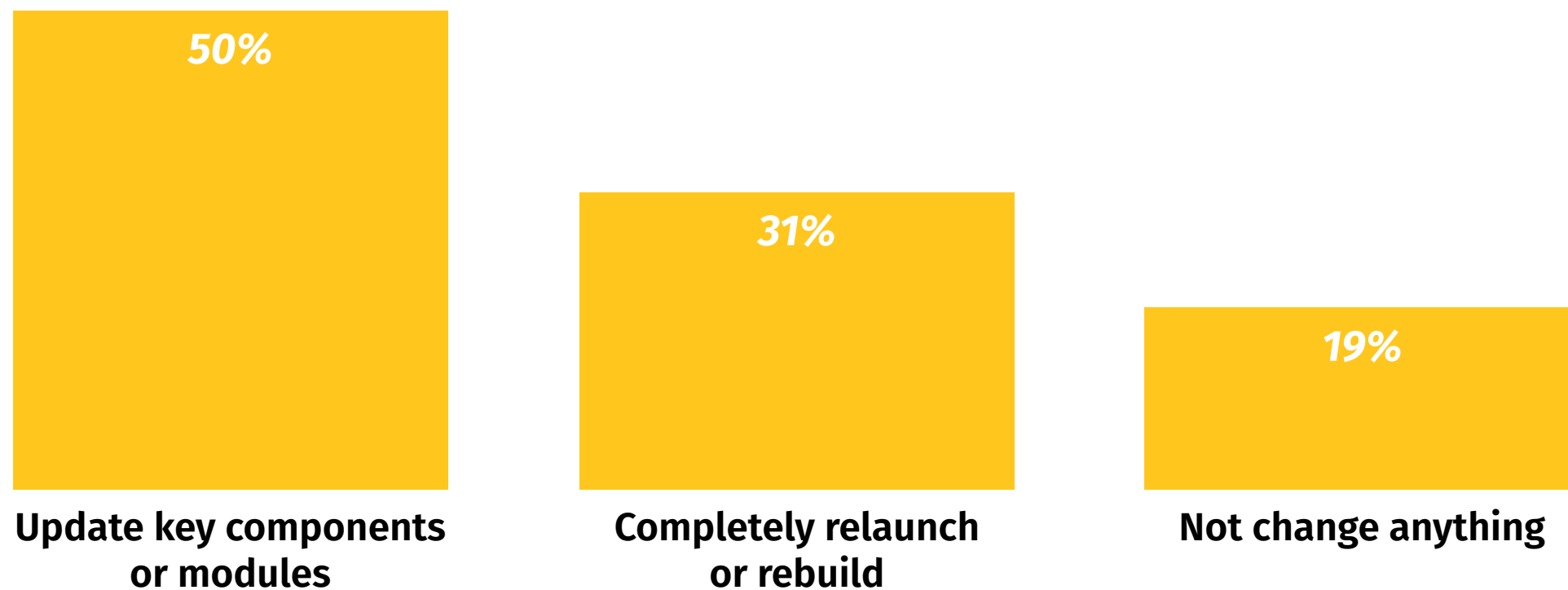
Video streaming platforms are in constant flux and change. Buyers are always looking to upgrade components and modules, and often overhauling, re-launching and rebuilding entire platforms. Change is the norm — keeping technology stacks static is not.

- **19%** buyers plan to **keep their platform the same** for the next two years.
- **31%** buyers plan to **completely relaunch or rebuild** their video streaming platform. This aligns with focus group feedback suggesting

that OTT streaming platforms are completely refreshed every 3-5 years on average.

- **50%** of buyers will be **upgrading some key components or modules** of their stack in the coming 1-2 years. A lot of buyers talk about the discovery, evaluation and procurement cycle moving from discrete technologies to a continuous process where some part of the platform is always being evaluated and often replaced.

Plans to upgrade or update video streaming *(in coming 1-2 years)*



Building or Buying More

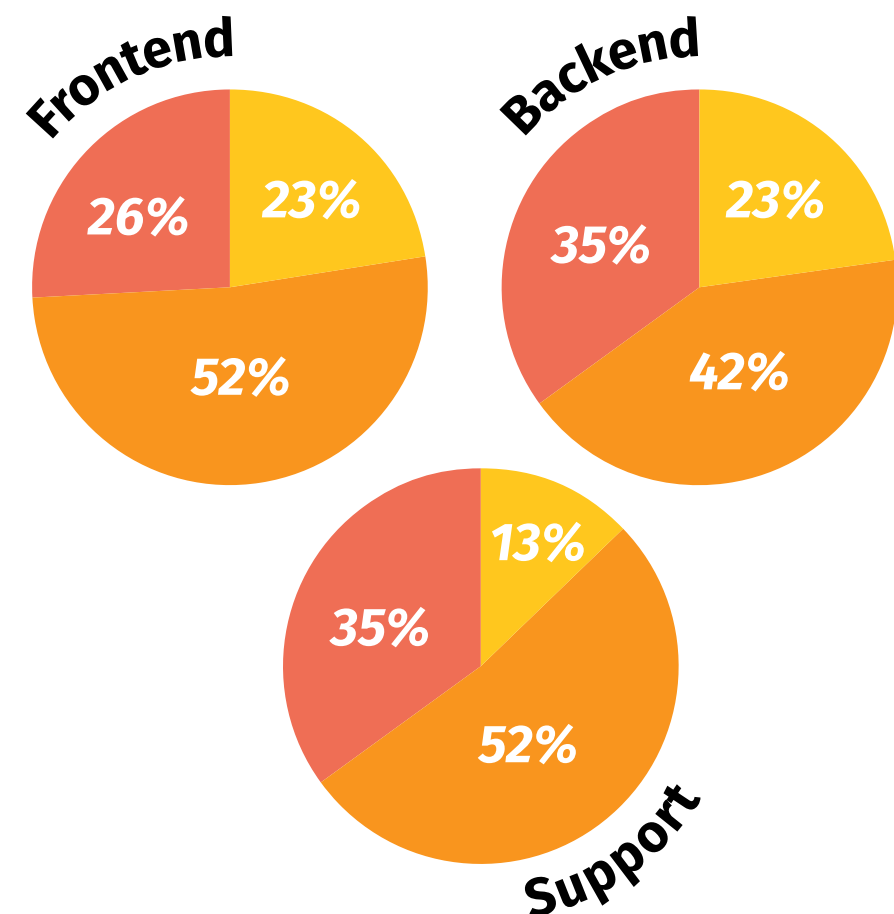
Buyers tend to make investments that follow their existing deployment — those that currently buy most technology are most likely to buy more, and those that currently build most technology are likely to build more. Since most buyers do a mix of both, there is a natural balance between building and buying that plays out in all deployments.

Buyers which are planning to change their sourcing strategy are about 60% likely to move towards vendors and about 40% likely to move towards in-house. Backend components and support services in particular are very likely to be bought from vendors in future, while frontend products are less likely to be bought as companies invest in-house to differentiate their services. But by far the most common response is to keep the current balance broadly as it is.

- Half of **frontend** work — apps and UI/UX — is expected to maintain the current balance of in-house and vendor responsibilities. Where frontend responsibility is moving it's evenly split between building more in-house and buying more from vendors.
- **Backend** components such as CMS, encoding, asset management, metadata and security are more likely to change their current balance — trending towards working more with vendors in about 40% of buyers while less than a quarter will do more in-house.

- **Support and maintenance** is expected to maintain the existing balance of in-house and vendor in about half of buyers, but around 40% of buyers are planning to work more with vendors and only around 10% plan to do more in-house.

Expectations to build more in-house or buy more from vendors

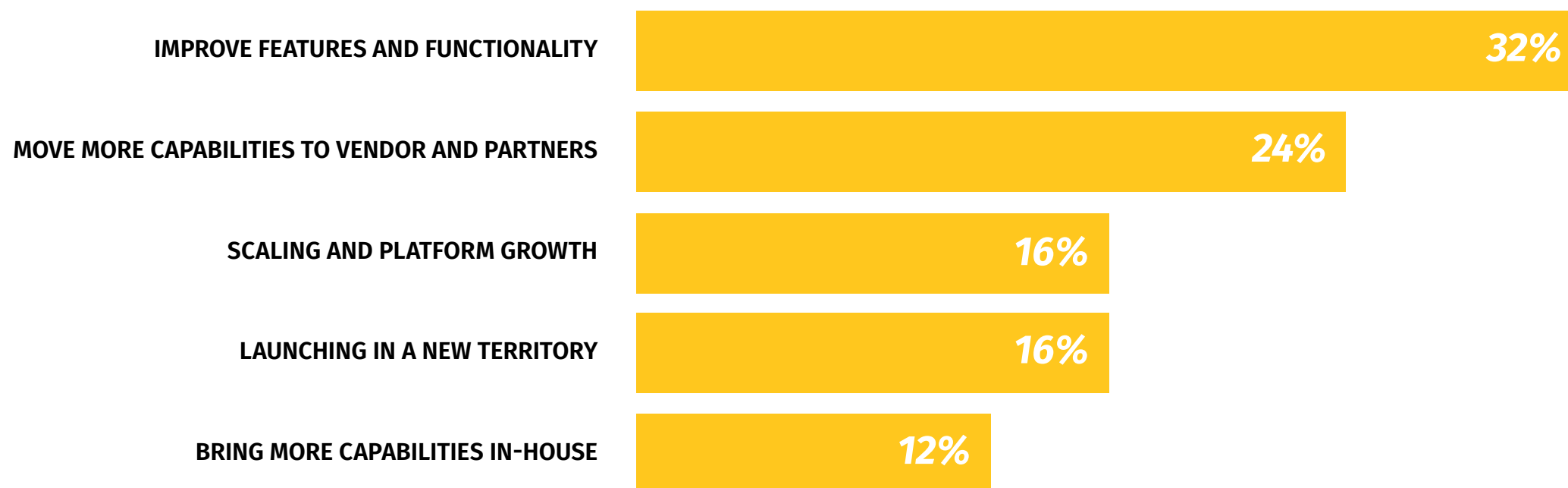


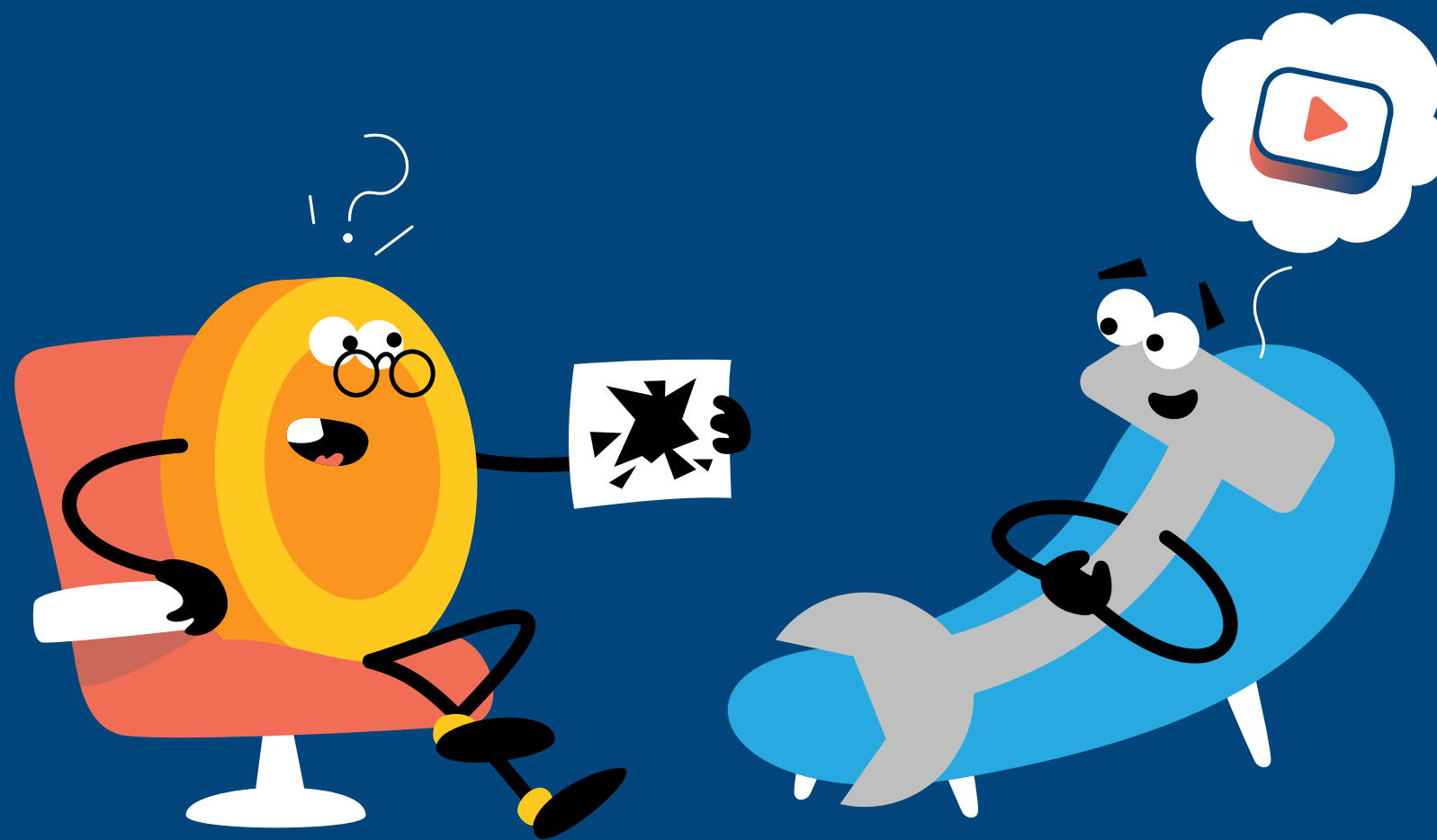
Drivers to Upgrade

What is driving a platform to upgrade or update ultimately determines what action makes sense and the urgency of the decision making. Many platforms are making incremental changes to features and functionality, while others are making strategic decisions to buy or build more, or commercial decisions to scale up or launch into new territories.

- Over 30% of buyers cite **improving features and functionality** as their main driver for platform upgrade and update. This is primarily incremental and often associated with **frontend** (apps, UI/UX), **platform API and middleware, video and metadata management** and **personalization and recommendation**.
- The second most important driver for platform upgrades was **moving capabilities to vendors and partners** and was the main driver in around 25% of buyers.
- **Launching in new territories** and **scaling and growing the platform** are also significant drivers, but commercial requirements tend to be of lesser importance than incremental technical needs and technology strategy in making decisions.

Main driver to upgrade or update platform

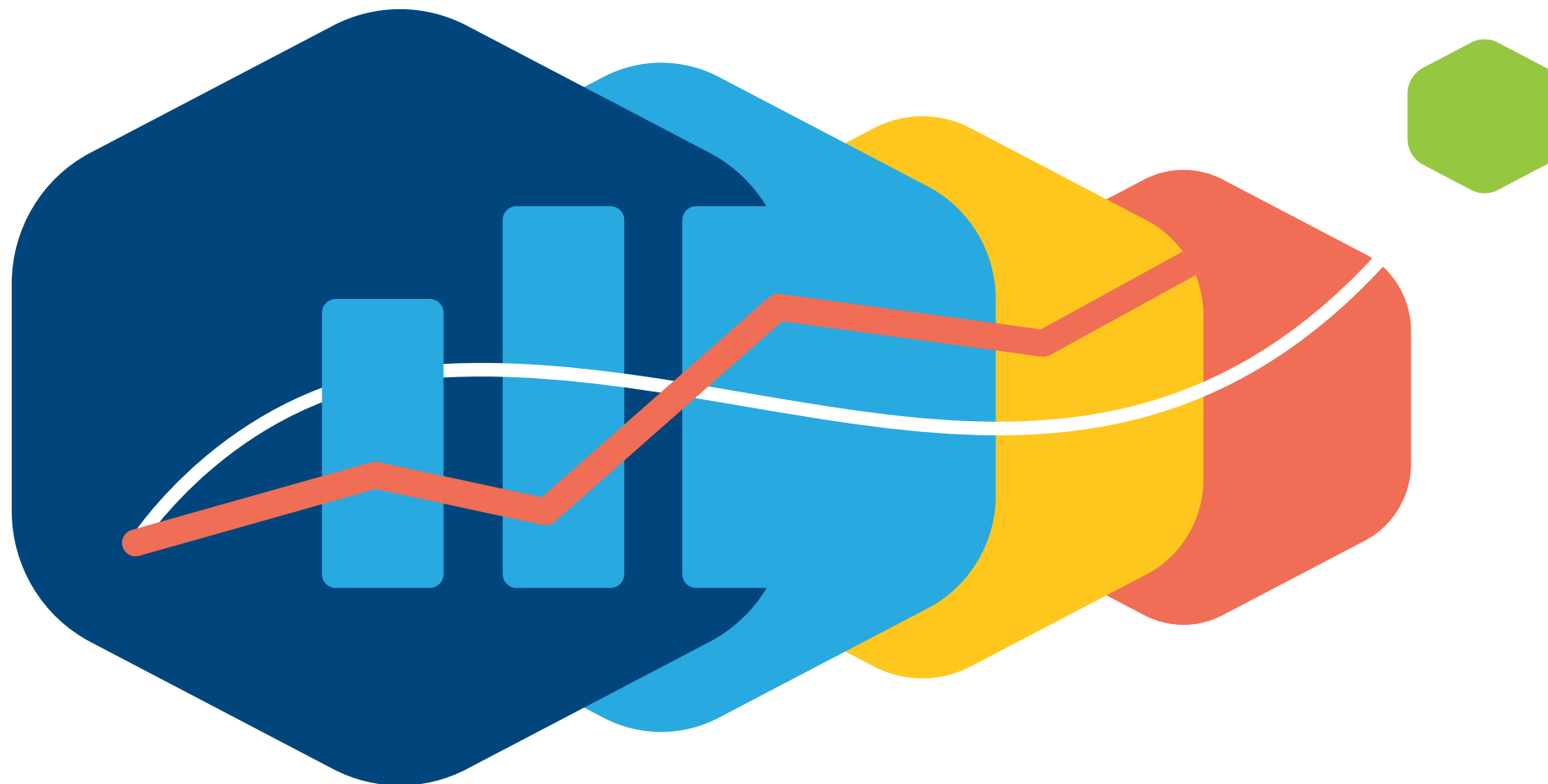




INTERVIEW FEEDBACK

How direct focus group feedback
compares to survey results

Validation and Trends

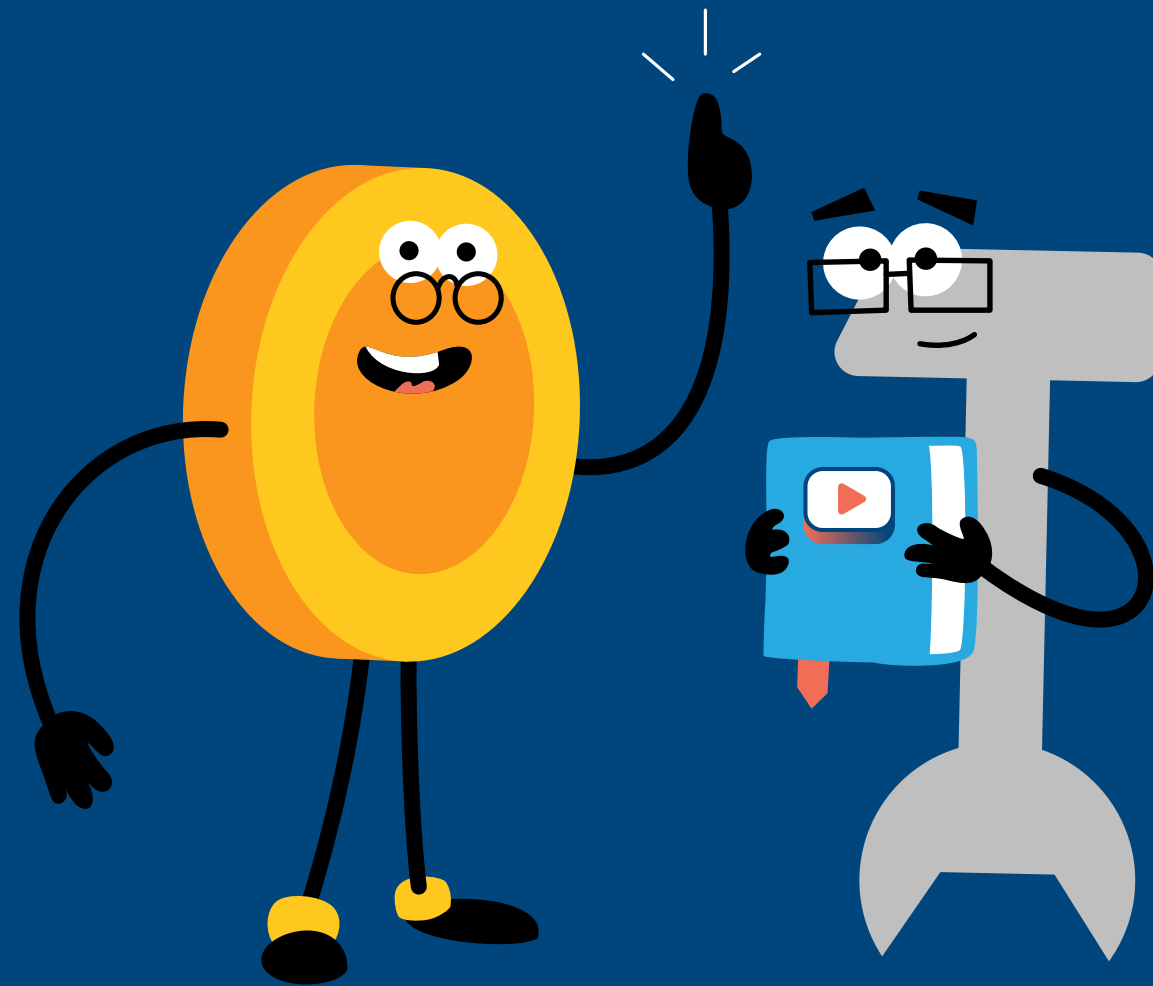


- Alongside the survey, a representative sample of buyers were contacted and interviewed as part of a focus group to better understand the drivers and rationales behind deploying, upgrading and maintaining video streaming technology and online video platforms. A large part of this was to gather context to buy vs build decisions in the real world to better interpret the survey results from a wider peer group.
- The results of the buyer interviews match closely with a lot of the trends discovered in the survey. Buyers often spoke of a cyclical process of building technology in-house to better understand needs, take advantage of in-house development teams, leverage open source and proprietary technology, and often spoke of the desire to control the roadmap and have a faster time-to-market.

- In-house builds were often followed by a process of re-evaluating the best use of developer time and overall maintenance and support costs as the requirements of the platform were refined and understood better. At some point this often led to some part of the stack being outsourced to vendors, either piecemeal or in its entirety. At this stage in-house development teams were more often used to maintain and customize elements of the solution, often focusing on customer-facing components such as apps and UI/UX design with many companies prioritizing data management tools for metadata, personalization and advertising, while larger companies tended to also prioritize video process, quality and security.
- Very often buyers were most stable when they were working with multiple vendors, some degree of customization, and often supported by an in-house development team. Buyers with a significant vendor, particularly if that vendor was not providing technology as a full service, often described varying levels of friction with the vendor over roadmap and priorities which would often

lead to demands to decouple elements of the stack for further customization, outsourcing to other vendors, or bringing those elements in-house.

- A wider view found that many buyers of online video platforms (OVPs) struggled to find a vendor that could offer enough support and roadmap outside of their top tier customers. The tendency is that any sufficiently large client will start to dominate the roadmap, often to the detriment of the next level of customers who will increasingly look to bring things in-house or to work with a more varied set of vendors and in-house components.



RECOMMENDATIONS

How to make the best technology
sourcing decisions for video streaming

What to Do About Video Streaming Technology



Flexibility, Customization and Control Are Critical Decision Factors for Most Buyers

- 1** Most buyers have a hybrid approach using some in-house development mixed with some vendor components.
- 2** There is almost always some element of customization, either using in-house or vendor development teams.
- 3** Maintaining control over the product roadmap, cost, dependencies and integrations all play a huge role in decision making for buyers.

The Best Approach Seems to be a Healthy Balance of Build and Buy

1

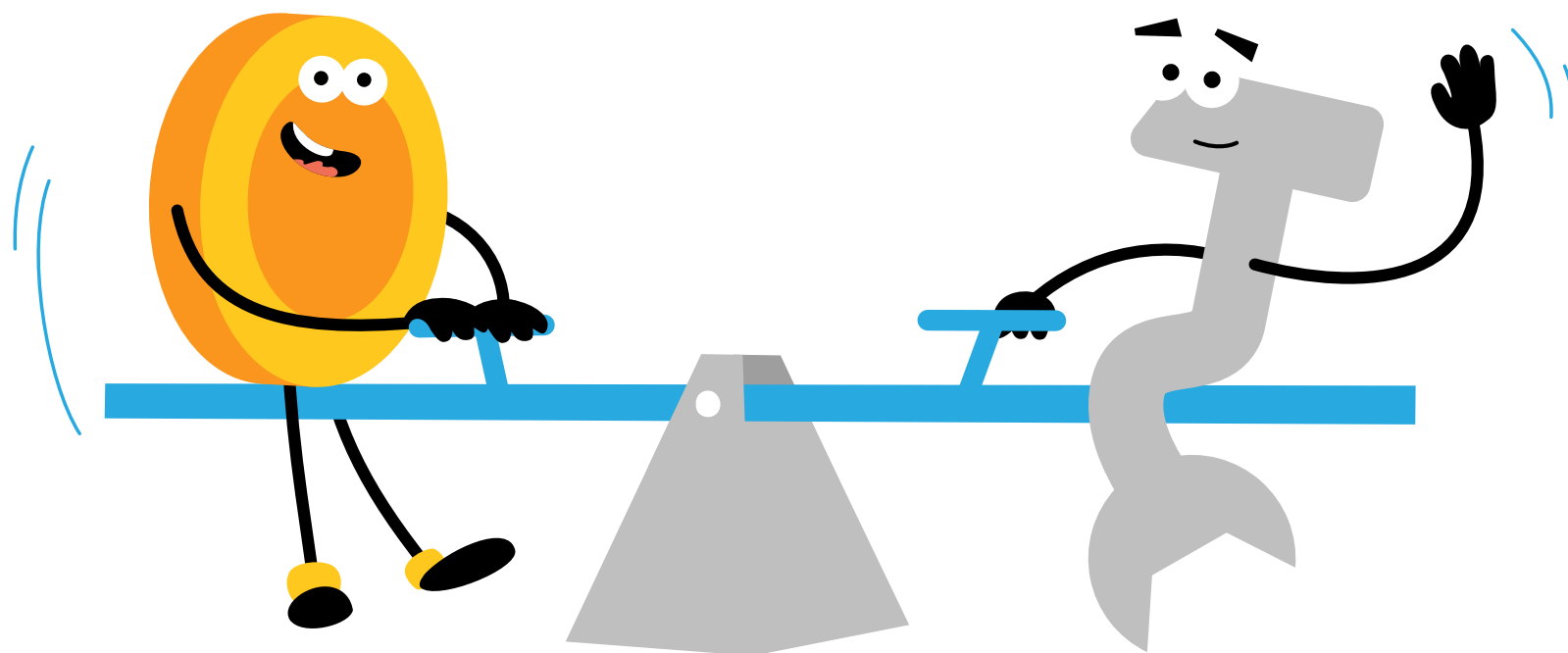
Build and buy is not an exclusive decision — most platforms are doing a bit of both and finding the balance is key.

2

Decisions are not set in stone, there is a rapid renewal of products and features, and it's critical to maintain the option to move away from previous decisions as needed.

3

Buyers tend to go with what they know — those that are building in-house are more likely to build more, and those that are buying from vendors are most likely to buy more — but very few buyers do everything in-house.





Prioritizing Investment Decisions or Video Streaming Technology

- 1** Buyers mostly invest in products that differentiate their consumer platform — apps and personalization, metadata, platform API and ad tech — and tend to focus development resources and upgrade plans on those areas as well.
- 2** Buyers are tending to move products like frontend, platform API, video and metadata management and personalization and recommendation in-house.
- 3** Commoditized products like DRM and encoding are very well suited to finding a vendor partner and don't attract as much investment from in-house teams, while products like entitlement and monetization are not being upgraded as frequently.

About Caretta Research

Founded in 2020 and headquartered in the UK, Caretta Research has grown rapidly to become the broadcast and media industry's leading provider of technology research, data and advisory. Currently with a team of 12 analysts, and growing, Caretta is based in London, Athens and Lisbon.

Serving technology buyers and vendors, Caretta helps them make better technology decisions using real data. Caretta provides industry data via Caretta Portal, consulting services to advise technology vendors and buyers on strategy, and marketing support with leading industry content including white papers and webinar production.

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visit our website [carettaresearch.com](https://www.carettaresearch.com)**

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About Axinom

Axinom provides software products for content-first platforms. The most prominent media, broadcast, and telecommunications organizations worldwide use Axinom products to solve the complex challenges of preparation, management, protection, and provisioning of premium content.

With over a decade of experience, Axinom has created a unique portfolio of products that enable encoding, content management, security via multi-DRM, and monetization. The video streaming and OTT platforms powered by Axinom serve millions of viewers worldwide while safeguarding content and revenues.

Founded in 2001 in Fuerth, Germany, Axinom employs over 100 personnel in offices located in Europe, Asia, and North America.

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