Monetizing Content in the API Economy

Content providers — legacy and born-digital alike — can generate more value and bolster the returns from their content by identifying the level at which it can be effectively packaged and sold.

Executive Summary

Digital has changed the game for content providers. Customers — whether businesses or consumers — are no longer willing to endlessly troll the Internet looking for relevant information. They want bite-sized pieces of content delivered to their chosen interface — whatever and wherever that may be.

The proliferation of digital platforms, the variety and granularity of media, and the ever-shorter attention spans of customers require content creators to rethink and rewire how they build, enrich, and disseminate digital content. The democratization of content and the entry of social media and technology giants into the content business are blurring the boundaries between media and entertainment market segments — creating a new ecosystem that will be driven by content-as-a-service delivery models. (See our white paper, “Winning the Content Wars: A Playbook for Today’s Content Providers”).
An effective content-as-a-service (CaaS) model allows organizations to store content in a form and at a level of detail that is easy to discover, repurpose, transform, and transmit. Today, service providers can use their application programming interfaces (APIs) as platforms for creating, delivering, and consuming content. At the same time, companies must consider the level of granularity needed to store and expose units of content in the most efficient way. They must also track the costs and revenues generated by individual units of content in order to refine their content supply chains and develop new business models.

Although technology constraints must be duly analyzed, content providers must first understand their content’s “lowest common monetization denominator” (LCMD) and the returns on content assets – terms we introduce and explore in this white paper.

**UNDERSTANDING & EXECUTING CONTENT AS A SERVICE**

At its essence, content as a service is a paradigm for delivering the right amount of content to the right customer at the right time through the right channel. By this we mean:

- Content is sufficient to meet a customer’s needs – no more, and no less.
- Content is hyper-personalized, based on a customer’s individual or organizational Code Halo™.¹
- Content is delivered precisely when the customer needs it – not before or after. Updates are in real time.
- Content is delivered on the platform of choice at the right time, then quickly and seamlessly transferred from one platform/device to another.
A viable CaaS model incorporates numerous services that connect to a customer-facing platform and expose units of content on demand. These can include Google cards on Android mobile devices; music on Apple iTunes; books and magazines on Amazon Kindle; news; articles on Flipboard; as well as shows on Netflix. The ubiquity of the Internet of Things (IoT) – the global network of small, powerful sensors and interconnected “things” that enables physical devices to link and share data through the Internet – is expected to make content as a service indispensable as all types of data are collected by big data platforms and made available to application developers.

THE API ECONOMY

As platforms, formats, devices, languages and locations for exposing content increase, so must the ease, speed and efficiency of managing and delivering it. In today’s environment, new ways of delivering content can spring up at any point. At the same time, organizations can no longer afford to deal with expensive, elongated time frames. APIs can transmit data/content to and from any destination quickly and cost-effectively.

More companies across industries are building capabilities to share data/content in a loosely coupled manner among internal systems, customers, partners, and third-party developers. They are also strengthening security and privacy, rights management, provisioning, and pricing to accommodate this emerging model. In the API economy, APIs are developed like products to support new business models. (For more, read our Cognizanti article “Making Dollars & Sense of The Platform Economy.”)

EXPLORING THE LOWEST COMMON MONETIZABLE DENOMINATOR OF CONTENT

The foundation of any CaaS model lies in its ability to accurately identify the smallest unit of content that can be stored independently and delivered profitably. We refer to this as the lowest common monetizable denominator (LCMD) of content that can be tracked, tagged, and reused. Companies can store content at the LCMD level and create aggregate or smaller levels of the data on demand, through taxonomy and semantics.

Business applications for LCMD of content include:

- **News organizations**
  - News headlines
  - Video clips

- **Business information services**
  - Financial records
  - Company contacts

- **Education services**
  - Test questions
  - Chapters and lessons

- **Broadcast content creators**
  - Episodes
  - Trailers

An API strategy is no longer the sole responsibility of IT, but a collaborative effort among product and technology teams to keep a digital business strategy on course. APIs are the drivers for most “X-as-a-Service” ecosystems, and “content as a service” is no exception. (See our Cognizanti article “XaaS Marks the Spot.”)
The objective is to strike the right balance between minimizing the effort to create, enrich, and deliver content, and maximizing its re-usability, exposure, and value.

Each piece of content at the LCMD level requires a unique identifier to be meaningfully utilized. Organizations can have different LCMDs for different lines of business and content formats. These LCMDs can be identified by evaluating pieces of content at a level of detail based on set parameters at various points of content activities (see Figure 1).

The objective is to strike the right balance between minimizing the effort to create, enrich, and deliver content, and maximizing its re-usability, exposure, and value. With this in mind, companies should focus on the following areas:

### A Framework for Determining the LCMD of Content

<table>
<thead>
<tr>
<th>Content Value Chain</th>
<th>AQUISITION</th>
<th>STORAGE</th>
<th>AGGREGATION</th>
<th>DELIVERY</th>
<th>CONSUMPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effort to create the piece of content with the required granularity.</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effort to store the piece of content with the required granularity.</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effort to merge the piece of content with the required granularity with other pieces to create aggregate units of content.</td>
<td>+</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Number of channels to which content can be sent with the required granularity.</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td>Possibility of customer willing to pay for content with the required granularity.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Suitability as LCMD</th>
<th>LOW</th>
<th>LOW</th>
<th>LOW</th>
<th>HIGH</th>
<th>HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDIUM</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH</td>
<td>LOW</td>
<td>LOW</td>
</tr>
</tbody>
</table>

Figure 1
### ACQUISITION: The stage where units of content are acquired from external sources, generated from scratch, or re-purposed from a repository of legacy content. The LCMD can be measured by the amount of effort needed to create a piece of content with the required granularity.

<table>
<thead>
<tr>
<th>LOW:</th>
<th>MEDIUM:</th>
<th>HIGH:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The piece of content is readily available, with the necessary detail (e.g., the score from the Super Bowl or a company press release).</td>
<td>Minimal processing is required to create content with the right granularity (e.g., test score percentile for a student in a class, or a news headline created from a story).</td>
<td>A high level of processing is needed to create the piece of content with a great amount of detail/ granularity (e.g., clips containing dialogue from an actor in a movie, or a new lesson written for a textbook).</td>
</tr>
</tbody>
</table>

### STORAGE: The point where units of content are meta-tagged and stored in a repository, then made available for search and discovery. The LCMD can be measured by the effort required to store the piece of content with the level of granularity specified.

<table>
<thead>
<tr>
<th>LOW:</th>
<th>MEDIUM:</th>
<th>HIGH:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The piece of content is stored at its current level of granularity in a repository (e.g., maximum and minimum temperatures for a city for each day are stored independently). All metadata is available within this piece of content.</td>
<td>The piece of content is stored in a repository as part of a bigger unit (e.g., a test question is usually stored as part of an assessment, or a lesson is stored as part of a chapter/title). Content must be identified and meta-tagged. Metadata may be inherited from other units of content, or derived through some type of processing.</td>
<td>The piece of content cannot be stored in its existing form in a repository, since it does not make logical or economic sense to do so. (e.g., a line from a poem cannot be stored separately without the entire work).</td>
</tr>
</tbody>
</table>

### AGGREGATION: At this point, units of content are merged to form aggregates, or sliced and diced into smaller units for delivery. This is when contextual logic is applied to link units of content based on customer needs. The LCMD can be measured by the effort involved in merging and aggregating the content.

<table>
<thead>
<tr>
<th>LOW:</th>
<th>MEDIUM:</th>
<th>HIGH:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The piece of content can be easily aligned with other content assets that directly correlate (e.g., a news headline can be linked with a detailed article and other articles on the same topic).</td>
<td>A piece of content can be aligned with other assets with indirect correlation and semantics (e.g., a movie trailer of a summer blockbuster can be linked to trailers of similar movies over the years through indirect correlations).</td>
<td>A significant amount of effort/time is required to merge the piece of content with others (e.g., face recognition software used to match a picture taken by a police officer may need a lot of processing power to find similar matches with pictures in the police repository).</td>
</tr>
</tbody>
</table>
**DEVELOPMENT:** This is the stage where units of content are delivered via customers’ interface of choice to provide a seamless omnichannel experience. Different channels may require different levels of content granularity. The LCMD can be measured by the number of channels that receive the content.

<table>
<thead>
<tr>
<th>HIGH:</th>
<th>4-6 channels</th>
<th>MEDIUM:</th>
<th>2-3 channels</th>
<th>LOW:</th>
<th>1 channel</th>
</tr>
</thead>
</table>

**Delivery Channels:**
- Wearables (watches, fitness trackers, AR / VR gadgets)
- Internet of Things (air conditioners, refrigerators, car displays, etc.)
- Mobile devices (smartphones, tablets)
- Online
- Print
- Broadcast

**CONSUMPTION:** The point where units of content are consumed at various levels of aggregation. Monetary returns depend on customers’ willingness to pay for content with the required granularity.

<table>
<thead>
<tr>
<th>HIGH: The customer is willing to pay directly to access content at its current granularity, on an individual basis (e.g., a business agrees to pay for a Paydex score for a vendor).</th>
<th>MEDIUM: The customer is willing to pay for access to content at its current granularity on an aggregate basis (e.g., the customer pays for a monthly subscription to an on-demand Internet streaming media service). Revenue can be generated from other sources, such as online ads.</th>
<th>LOW: The customer is unwilling to pay for access to content at its current granularity (e.g., not inclined to pay for a chapter in a novel, but will pay for the entire novel).</th>
</tr>
</thead>
</table>

As a general principle, if the values of all content parameters fall within the section highlighted in orange (as shown in Figure 1) it is a good fit for LCMD consideration. However, companies can determine the factors that best align with their requirements and constraints. For example, an organization may be willing to devote a lot of effort to acquiring content at the LCMD level if the number of delivery channels and the profitably potential correspond. Assigning weights to each parameter can help determine a score for identifying the LCMD. If content at its current level of granularity doesn’t fall within the parameters above, the company should consider higher or lower levels to determine the best fit.

Companies should keep in mind the following:
- While our model’s parameters should be configured in the order in which they fit in the content value chain, companies can evaluate these factors in any order they consider appropriate. For example, a company may want to evaluate delivery channels first if the lowest level at which content can be stored depends primarily on those channels.
- An organization can have different LCMDs for different types of content and formats. For example, text content can be monetized at a different level of granularity than multimedia.
content. Similarly, the latest news items can be monetized at the headline or video-clip level. Editorial content can only be monetized at the composite level.

- How content fits a level of granularity for LCMD evaluation depends on an organization's strategic vision and roadmap. Technology maturity, delivery channels, and the appetite for innovation also come into play.

The LCMD of content may change over time, due to changes in technology and business strategy. For example, an assessment service provider might consider a test consisting of 10 questions as an LCMD at one point, but later come to regard a single test question as such. Considerations related to rights and royalties must be accounted for during the evaluation of each parameter in the LCMD model.

THE VALUE OF CONTENT AS A SERVICE

Once an organization has identified the LCMD of content, it can evaluate the returns from pieces of content created at that granularity, i.e., returns on a content asset (RoCA). For a typical large enterprise that performs traditional content-related activities, identifying returns from a basic granular unit of content can be challenging. The level of information needed to arrive at an accurate estimate of cost and revenues may not be easy to capture.

In such scenarios, the most logical approach is to identify the aggregate numbers at each stage of the value chain across basic cost and revenue parameters, then apportion those based on the number of LCMDs of content processed at each point. Returns on content assets must be calculated separately for each type of content in an organization, as well as each line of business, since cost and revenue are calculated differently in each case.

For the sake of simplicity, consider that the first four stages in the content value chain – acquisition, storage, aggregation, and delivery – contribute costs to a content asset, whereas the last stage – consumption – contributes revenue.

The financial return on each content asset can be determined using the following formula:

\[
\text{Return on content asset ($)} = \text{Revenue generated by the content asset at the end of the value chain ($)} - \text{Cost incurred on the content asset across the value chain ($)}
\]

Understanding Costs

The costs of content activities (value chain) can be placed into four high-level "buckets":

**Procurement & Delivery:** These costs pertain to both the development and delivery of products and services, (costs for content acquisition/data collection; rights and royalties; data pre-processing and cleansing; logistics, etc.).

Procurement costs span acquisition and aggregation activities. At the aggregation stage, new rights and royalties may have to be negotiated/paid based on the way individual content assets are grouped. For example, rights to a movie title may have been purchased for streaming within a specified time frame, geography, or channel. If one of these services is added, the rights must be re-negotiated.

These costs apply at the content-delivery stage.

**Human Capital:** These costs are associated with the management of human resources involved in content-related activities, and can originate from internal employees, contractors, or vendors. The aggregate human capital cost is likely to be the largest for traditional organizations that have limited automated processes.

Human capital costs are applicable across acquisition, storage, aggregation, and delivery of content.
Applications: These costs are incurred during the purchase, development, maintenance, and upgrades of software across the content value chain. They also include licensing costs for various third-party software tools.

Application costs apply during the acquisition, storage, aggregation, and delivery of content.

Infrastructure: These costs pertain to the maintenance of the physical and logical infrastructure at various stages in the content value chain. They apply to servers, storage, cloud, office space, and other IT-related assets.

Infrastructure costs are incurred during acquisition, storage, aggregation, and delivery of content.

Understanding Returns
When calculating returns on content assets, companies can divide these elements into fixed and variable costs:

Fixed costs: These expenses do not vary from one content asset to another. For example, server costs will remain consistent across all content assets within a line of business with the same format. The aggregate level for these costs can be divided by the total number of content assets at that stage to obtain the cost per asset.

Variable costs: These expenses differ from one content asset to another (think of rights and royalties), depending on the need and value. An image of Mahatma Gandhi may cost more to acquire than an image of a goat. These costs can only be allocated for the set of content assets they are associated with.

Some cost elements can have fixed and variable components (see Figure 2). For example, some employees may be required to perform tasks that are common among all content assets, such as project management. Others may be needed to handle only a few content assets, like special effects for an episode in a series.

Breaking Down Content Costs

<table>
<thead>
<tr>
<th>COST BUCKET</th>
<th>COST ELEMENT</th>
<th>FIXED?</th>
<th>VARIABLE?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PROCUREMENT &amp; DELIVERY</strong></td>
<td>Content Acquisition</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rights &amp; Royalties</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Pre-Processing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Logistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HUMAN CAPITAL</strong></td>
<td>Employee</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td></td>
<td>Contractor</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td></td>
<td>Vendor</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>APPLICATIONS</strong></td>
<td>Licensing</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td></td>
<td>Development</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td></td>
<td>Upgrades</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>INFRASTRUCTURE</strong></td>
<td>Servers</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td></td>
<td>Storage</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td></td>
<td>Cloud</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td></td>
<td>Office Space</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

Figure 2
The revenues from a content asset fall into the following high-level categories:

**Direct revenues** include profits from purchases, subscriptions, or royalties used by third parties. Since content assets are frequently bundled in an aggregate form to generate revenue, an organization would need to apportion that into constituent assets based on their relevance to the customer, or divide them equally if detailed consumption data is not available. For example, in the case of an e-textbook that is purchased and read online, if one of its chapters is regarded as an LCMD of content, the revenue from each chapter can be apportioned based on the percentage of time a student spent reading it. If a student purchased the digital textbook containing 10 chapters for $5, and spent 40% of the total time reading one chapter, the revenue apportioned to the chapter can be 40% of $5.00 (i.e., $2.00). In cases where such data is not available, each of the 10 chapters can be assigned a common revenue of $0.5. Most organizations are already tracking direct revenues for different types of content assets based on their revenue model.

- **Subscription revenues** apply in cases where monthly or weekly subscriptions on a proprietary platform are owned by the content provider; total revenues can be apportioned to the content assets that were consumed during the specified period. For example, if a person watches 20 episodes of three different series with a $14.99 monthly subscription of HBO Now, each of the 20 episodes can be regarded as having generated $0.75 in revenue per viewer. In cases where a subscription is on a third-party platform (where the end customer pays the third party and not the content provider), the returns will be categorized as licensing revenues.

- **Licensing revenues** pertain to situations where rights to a piece or bundle of content are granted to a third party that eventually sells it to the end customer. The revenues shared by the third party and the content provider can be apportioned to the content assets consumed. As a hypothetical example, if Netflix pays CBS $50,000 annually for the rights for all episodes to Star Trek: The Original Series for a year, CBS can apportion the $50,000 revenue to various episodes based on the number of times each episode was watched.

- **Product sales revenues** are generated when content is sold as individual products. Revenues can be apportioned based on the number of content assets for each product. For example, if a print textbook offers 20 lessons, the revenue can be apportioned to each of the 20 lessons.

- **Usage-based revenues** apply in scenarios where revenues come from the volume or number of transactions processed by the end customer or system. These returns can be assigned to content assets consumed. For instance, D&B has a credit-rating API plugged into a customer’s CRM application, and charges the customer by the number of credit ratings it calculates. Revenues based on usage can be apportioned to these ratings.
Indirect revenues are generated from a content asset by cross-selling or up-selling other assets, or retaining customers over time. By definition, indirect revenues are more difficult to track. However, as more data is consumed on digital platforms, it will become easier to follow. For example, if a customer purchases a single song from an artist on iTunes then proceeds to purchase another five from the same artist, the original purchase would be granted a small portion of the revenue from the other five titles. The way indirect revenue is generated, as well as its amount, can vary to a much greater extent than direct revenue. The apportioning of indirect revenues can also be problematic. For example, after reading part of a novel on their Amazon Kindle, a reader loses interest in the book and selects another. In this case, the first novel should not be apportioned any indirect revenue. Organizations need to define the right formula for sharing indirect revenue, based on their business model and customer habits.

Figure 3 presents a framework for calculating revenue from content assets.
We expect industry benchmarks for RoCA to be published by industry analysts for various types of content assets and industry segments.

**KEY CONSIDERATIONS**

In some instances, the LCMD of content is formed at an intermediate point in the content value chain (e.g., a chapter of a book or an episode of a web series is only created at the aggregation stage, and is not a factor in acquisition and storage). In these scenarios, the elements of each LCMD of content at previous points must be identified and costs apportioned accordingly.

An organization can determine the functions it would like to incorporate when calculating cost and revenue. For example, one company might want to exclude the cost of supporting processes such as R&D, human resources, and finance, and instead focus on capturing the costs involved in activities that directly contribute to the content value chain. Another organization might decide to include all costs across the board. As a general principle, we recommend that large, traditional enterprises limit their calculations to factors that add value to the content value chain and exclude support functions.

As with any model based on financial data, the accuracy of the result depends on the accuracy of the data that provides the input. Organizations must carefully evaluate the cost and revenue factors at each point in the content value chain to ensure that the calculations are complete and correct.

In cases where a business has content creators on its payroll, those costs can be viewed as human capital. However, if an organization acquires content from contractors, those expenditures can be regarded as procurement costs.

The costs of business processes associated with content activities can be assigned to human capital costs (for the resources engaged in executing those processes) and application costs (for the applications used to implement the business processes).

As more organizations make the transformation to digital, tracking returns on content assets will be enhanced by big data analytics using Code Halo thinking. We expect industry benchmarks for RoCA to be published by industry analysts for various types of content assets and industry segments.

**LOOKING AHEAD**

The costs and revenue factors discussed in this paper can help companies identify the kind of returns they can generate from an LCMD of content. Given that every content provider is different in terms of size, industry, and complexity, it is impossible to prescribe a formula for calculating a return on content assets for all companies and all scenarios. The approach presented here is intended as a guide.
As digital transformation accelerates, content providers are changing the nuts and bolts of their content activities. However, no organization is expected to get everything right at the outset.

The concepts of LCMD and RoCA will no doubt evolve as organizations evaluate their value chains against those models and make necessary adjustments. Born-digital content providers are in a better position to isolate LCMDs of content and identify RoCAs since they build their content activities around basic units of content that can be tracked quickly and accurately. Traditional players are expected to catch up soon.

As more content is delivered as a service through myriad APIs, more data will be generated to help content providers create more accurate models for identifying their LCMD of content and measuring their RoCA. Accurately identifying a basic unit of content and capturing its returns will likely be the fundamental building blocks for a content-as-a-service model in the rapidly expanding API economy.
FOOTNOTES


2 en.wikipedia.org/wiki/Paydex

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COGNIZANT DIGITAL CONTENT SERVICES

Cognizant Digital Content Services is a communications, media and technology-focused competency group that facilitates content operations transformation to address the challenges of an increasingly digitalized and global content industry; using automation, platforms and digital – helping enterprises generate maximum value from their content in this digital age.

ABOUT COGNIZANT

Cognizant (NASDAQ-100: CTSH) is one of the world’s leading professional services companies, transforming clients’ business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 205 on the Fortune 500 and is consistently listed among the most admired companies in the world. Learn how Cognizant helps clients lead with digital at www.cognizant.com or follow us @Cognizant.