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# Monetization in the Era of 5G

Strategies to prepare for the  
arrival of 5G and the next  
generation of telecoms



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# Summary

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## Catalyst

Communications service providers (CSPs) have already begun to deploy 5G networks around the world and deployments are expected to ramp up across the industry by 2021. However, as 5G network deployments get underway many CSPs are still struggling with monetizing LTE networks and many more have yet to identify the business case for 5G. Capabilities such as network slicing, which will be enabled by 5G, will present CSPs with an opportunity to explore new business models and revenue streams. Before CSPs can monetize 5G, they will need to invest in a myriad of IT and business capabilities to support the evolving demands of the telecoms industry.

## Omdia view

As 5G network rollouts begin to ramp up across the telecoms industry, many CSPs continue to struggle with the uptake and monetization of LTE services. Additionally, the lack of a “killer app” service for 5G has left many CSPs without a business case to drive their network rollout. Despite this, CSPs will still need to deploy and find ways to monetize 5G.

Rather than focusing on a single 5G use case, CSPs should focus on the enabling capability of 5G. Focusing on B2B, rather than B2C, use cases such as enhanced enterprise services, services from and for dynamic partner ecosystems, and B2B2X services will present CSPs with more lucrative opportunities to monetize 5G.

Before CSPs are ready to monetize 5G, however, they will need to ensure that their IT systems are 5G compatible, can support their 5G business models, and are agile and scalable. In addition to preparing IT systems to monetize 5G, CSPs will also need to make sure that they are operationally agile enough to support 5G business models by adopting DevOps and other agile operating models.

## Key messages

- Wide-scale deployments of 5G will begin in 2021 and CSPs will need to begin planning their 5G monetization strategies.
- B2B-centric business models such as enhanced enterprise services, B2B2X business, and dynamic partner ecosystems will present CSPs with better opportunities to monetize 5G.
- Successful 5G monetization will require the support of 5G-compatible rating, charging, and policy control systems. CSPs will also need to ensure that IT systems are agile and capable of supporting their 5G monetization strategies and business models.

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# CSPs must prepare their 5G monetization strategies now

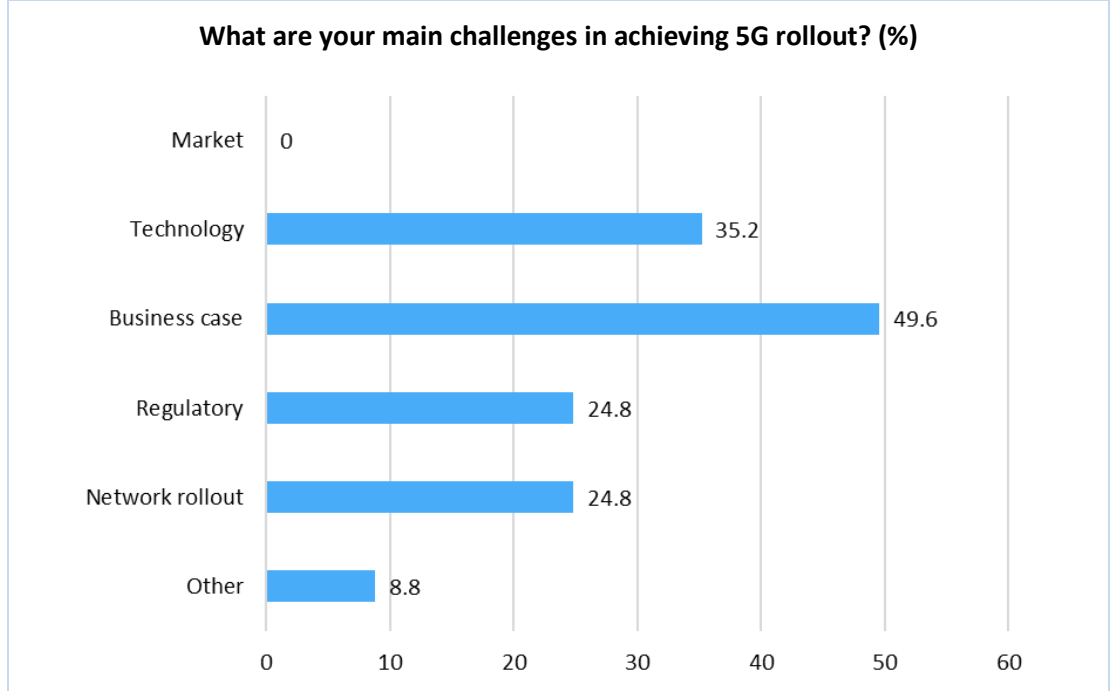
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## Wide-scale deployments of 5G will begin ramping up across the industry starting in 2021

Wide-scale industry deployments of 5G are fast approaching. To date, more than 30 CSPs worldwide have already deployed 5G and Omdia predicts that deployments will ramp up in 2021 after the finalization of 3GPP standards release 16, which will cover network slicing, standalone 5G RAN, and the 5G core.

Despite quickly approaching the point of wide-scale industry deployments, Omdia's *2019 5G World Series Market* survey found that 31% of CSPs are still struggling to improve the uptake and monetization of LTE services. Additionally, as Figure 1 shows, nearly 50% of CSPs stated that the lack of a business case is the biggest challenge in achieving a 5G rollout. While this will not deter CSPs from launching 5G, it does highlight the challenge ahead for them in maximizing their 5G network investments.

**Figure 1: The lack of a business case for 5G presents a challenge for nearly half of CSPs**



Source: Omdia 5G World Series Market Survey 2019

In addition to struggling with less than desirable uptake and monetization of LTE, CSPs are also grappling with the decline in revenue and market share as internet content providers (ICPs) such as Amazon and Facebook find success in the industry. According to Omdia’s *Communications Provider Revenue and Capex Tracker*, ICP market share has increased from 29% to 40%, while CSP market share has declined from 70% to 58% from 2013–18.

In the face of these unfavorable conditions, 5G represents an opportunity for CSPs to change the narrative. The era of 5G will be less about fueling individual use cases or services and more about CSPs’ ability to test new services more often and adapt quickly to the market (also known as “fail fast”). For these reasons, a clear business case need not be established in order to justify rolling out 5G. Instead, CSPs must focus on developing a clear monetization strategy for 5G and acquiring the necessary IT and business capabilities to support said strategy.

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# CSPs should be looking to B2B, not B2C, for monetization opportunities

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## Consumer services are unlikely to present any significant opportunities for monetization

While consumer services have been the primary revenue driver of previous generations of mobile network technologies, that is not likely to be the case for 5G. According to Omdia's *2019 5G World Series Market* survey, only 25% of CSPs see B2C as having the potential to be the biggest driver of 5G revenue growth, while 57% see B2B and B2B2X scenarios as having the most potential. This is partly due to the lack of a "killer app" for 5G. For example, 2G enabled MMS, 3G enabled mobile apps, and 4G enabled digital services such as gaming and HD mobile TV. Without a disruptive new service being directly tied to 5G, CSPs will be limited in what they can expect to charge consumers for 5G services. Omdia's *2019 Consumer Insights* survey, for example, found that 42% of consumers would only be willing to pay up to a 10% premium for 5G, while 25% of consumers state that they would not be willing to pay a premium for 5G. Moreover, of those CSPs who have already launched 5G, many are offering it to consumers for either a small fee or at no additional cost.

The success of B2C models for 5G will also be directly tied to the required upgrade cycle for 5G-compatible consumer devices. Only consumers with 5G-compatible devices will be able to use 5G services and devices are just beginning to come to the market. Several device manufacturers including Huawei, Samsung, and Google have already launched 5G-compatible handsets and Apple is expected to release its 5G-compatible devices in 2020. However, it is still left to be seen just how quickly consumers will upgrade their devices and whether the perceived benefits of 5G will be enough to justify consumers investing hundreds of dollars in a new device.














## B2B business models offer the biggest opportunities for 5G monetization

### 5G offers CSPs an opportunity to deliver enhanced enterprise services

B2B business models will present CSPs with a much larger opportunity to monetize 5G than B2C business models. Enterprises across industries are undergoing digital transformations and nearly 80% of enterprises plan to increase their ICT spend in 2020 according to Omdia’s *ICT Enterprise Insights* survey. Moreover, the same survey indicates that 36% of enterprises expect 5G to play a major role in their organization’s transformation.

Enabling digital capability and modernizing the workplace are some of the top enterprise IT priorities in which CSPs can play a significant role. Enhanced mobile broadband, for example, will enable enterprises to reduce their dependency on fixed WAN services and transform how and where employees work. Higher employee mobility will also lead to additional 5G monetization opportunities, as Figure 2 illustrates.

**Figure 2: Mapping human workstyles to 5G impact**

	Desk Jockey 	Work Surfer 	Free mover 	Local Roamer 	Holster Nomad 
<b>Description</b>	Job requires a fixed position to perform tasks from a single location	Job requires a fixed position to perform tasks in multiple, ad hoc locations	Job tasks are both stationary and mobile in multiple locations	Job requires high mobility to perform tasks in a single location	Job requires high mobility to work in multiple locations
<b>Task mobility</b>	Stationary 		Hybrid 	Mobile 	
<b>Environment</b>	Indoors 	Indoors mainly 	Indoors/Outdoors 	Indoors mainly 	Indoors/Outdoors 
<b>Occupations</b>	Office manager, IT helpdesk, telemarketer	Freelance web developer, virtual assistant, IT contractor	Architect, photographer, surveyor	Warehouse supervisor, production controller, caterer	Field service engineer, skilled trades, home health aide
<b>5G impact</b>	Low	High	High	Medium	High
<b>5G enrichment examples</b>	<ul style="list-style-type: none"> <li>Superior broadband access speed in some locations</li> <li>Seamless network backup</li> </ul>	<ul style="list-style-type: none"> <li>Rapid data processing</li> <li>Secure ideation platform</li> <li>Augmented visualization</li> </ul>	<ul style="list-style-type: none"> <li>Live data sharing</li> <li>Augmented visualization</li> <li>Drone data capture</li> </ul>	<ul style="list-style-type: none"> <li>Hands-free collaboration</li> <li>Automation support</li> <li>Sensor data access</li> </ul>	<ul style="list-style-type: none"> <li>Live safety monitoring</li> <li>Sensor data access</li> <li>Voice-controlled apps</li> </ul>

Source: Omdia 2020 Trends to Watch: SoHo and SME Services

As employee workstyles evolve away from the traditional worker in a fixed location, new 5G monetization opportunities will emerge. “Free moving” workers such as medical professionals, for example, will benefit from enhanced 5G services such as augmented visualization and live data sharing. Job roles that require a high degree of employee mobility, such as field service workers, can benefit from 5G services like voice-controlled apps. Even more modern roles with low mobility present an opportunity for CSPs to monetize 5G; web developers and IT professionals, for example, can benefit from 5G services such as rapid data processing.

CSPs can also leverage the unique capabilities of 5G to deliver enhanced enterprise services not targeted toward employee workstyles. According to Omdia’s *ICT Enterprise Insights* survey, 38% of enterprises also stated that they anticipate that 5G will enable them to receive a higher class of service for certain applications. To address this need, CSPs can offer services like dedicated network slices. Dedicated network slices for

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enterprises or based on application criticalness then become new revenue streams through which CSPs can monetize 5G.

#### 5G will serve as a catalyst for B2B2X business models

B2B2X business models will be some of the most interesting business models that will come out of 5G. Though there is no killer app for 5G, the next-generation network technology is expected to transform industries. Omdia's *2019 5G World Series Market* survey found that CSPs anticipate the gaming, smart cities, and media and entertainment industries to be the biggest drivers of 5G revenue. However, 46% of respondents state that lack of industry knowledge is the biggest obstacle to moving into vertical markets.

What CSPs are missing, however, is that they do not need to be the industry experts; they need to be the industry enablers. The killer app for 5G is not a single service that 5G enables, but rather is in 5G's enabling power. By combining the things that CSPs do well (e.g., managing a large customer base; large volumes of activity; customer data) with the high speed, low latency, and network slicing of 5G, CSPs can be the centerpiece of cross-industry services, without needing the vertical expertise.

A common B2B2X business model that we expect to see is in the delivery of IoT services. Omdia's *ICT Enterprise Insights* survey found that nearly 45% of enterprises see 5G as an opportunity to expand their IoT strategies. However, enterprises also note that implementing IoT technology, and integrating it with existing technology are two of the top-three barriers to IoT delivery as reported by 54% and 56% of enterprises, respectively.

In a B2B2X business model, CSPs can leverage their expertise and capabilities to offer managed and value-added services to enterprises throughout the IoT supply chain and across multiple industries to address these challenges. Managed services that play on the CSP's strengths such as customer data insights (to drive marketing efforts, etc.), billing-on-behalf-of, and white-label billing, for example, are natural services for CSPs to offer. The always-on, high-volume billing demand of the telecoms industry make CSPs the experts in delivering such services to enterprises across industries. Moreover, not only do such managed services not require CSPs to invest in becoming a specialist in each vertical they wish to support, but because they are able to serve multiple industries at once, they can create a revenue stream that is much wider than if they were to focus only on a few verticals.

CSPs with strengths in other areas such as device or ID management, or security services, for example, can expand their services offerings into these areas.

#### 5G will be an enabler of dynamic partner ecosystems which will become its own revenue stream

CSPs' partner ecosystems are an ideal target for 5G monetization. Today, the number of partnerships a CSP can form are quite limited because of the effort and time that it takes to form them. Creating a platform-driven partner ecosystem will allow CSPs to expand their partner relationships with minimal effort and the vast network of partners can then be monetized using fee-based APIs.

A dynamic partner strategy provides a platform on which enterprises – regardless of size – can be onboarded quickly as a CSP partner. During the onboarding phase, details such as contract length, SLAs, revenue sharing, and other items are made available on the platform for prospective partners to choose from; like a customer selecting their service



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bundle. The platform also provides a unified product catalog in which partners can make their services available, and from which they can use the CSP's and other partner's services already in the catalog, to develop unique service bundles. Finally, the platform also provides partners with value-added services such as white-label billing, marketing services, and data insights (e.g., insights on customers to be used to enhance marketing), all enabled via fee-based APIs.

Such an approach to partner management not only allows CSPs to grow their partner ecosystem and differentiate their offering in the market, it also enables CSPs to leverage this dynamic partner ecosystem to carve out a new revenue stream via the fee-based APIs.

It is important to note that while larger partner relationships will continue to require significant time and effort to manage, moving to a platform-based approach allows CSPs to foster closer relationships with the small-to-medium-business (SMB) segment. By collaborating with more enterprises, CSPs can better differentiate themselves in the market. Additionally, smaller partners, such as those in the SMB segment are also most likely to be users of CSP-delivered, value-added services such as data insights and white-label billing.

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# CSPs need to transform business and IT capabilities to prepare to monetize 5G

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## CSPs must invest in upgrading legacy systems to ensure that they are 5G-ready

As CSPs plan their 5G network rollouts, they must also begin thinking about the IT capabilities needed to support the delivery and monetization of 5G services. In Omdia's *5G World Series* and *ICT Enterprise Insights* surveys, we have found that managing and monetizing 5G services is a business challenge for nearly 80% of CSPs, but only 18% plan to invest in OSS and BSS capabilities to support the 5G rollout. It is important for CSPs to note, however, that not all IT systems will be compatible with the 5G network and upgrades will need to be made to some systems, (e.g., rating and charging, and policy control systems) to ensure that they can support the delivery and monetization of 5G services.

### Rating and charging

Legacy rating and charging systems, for example, will need to be replaced with a 5G-compatible convergent charging system. The new charging system (CHF) should include a rating function, account balance management function, and a charging gateway function that connects the charging function from the network to the billing domain. A key difference between 5G and legacy charging systems is that the charging function sits closer to the network and the gateway function eliminates the need for billing mediation. In addition to these simple improvements to the rating and charging processes, CSPs will also need a 5G-compatible charging system to support more complex 5G scenarios such as setting charging parameters for network slices based on QoS and other conditions.

### Policy control

CSPs will also need to replace legacy policy control systems with one that is 5G compatible. The key upgrades in capability of the 5G policy control is in its ability to support policy control function (PCF) for network slices. When managing network slices the session management (SMF) and network data analytics (NWDAF) functions must relay information about the network slice and slice load to the PCF, which will then feed the information to the CHF (and then on to the billing domain) for specific rating and charging schemas based on these conditions. The 5G policy control system will also allow CSPs to further segment their service offerings based on network slice conditions, define various KPIs for a given slice (which will be important for enterprise and emergency use cases), usage limits, and other conditions. Network slicing use cases, particularly for B2B

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and B2B2X scenarios where enterprise customers use one or more private or shared network slices, must be supported by these updated systems.

## IT agility will be crucial to the success of new business models

In addition to ensuring that IT systems are compatible with the 5G network, CSPs must also ensure that systems are compatible with 5G business models. The era of 5G will be less about supporting individual use cases and more about CSPs' ability to adapt quickly to the market or "fail fast."

In order to adapt quickly to the market and to support the business models and monetization strategies of 5G, CSPs will need to make strategic investments into improving IT capability.

### Monetization systems must support 5G strategies

Rating, charging, and policy control systems will be the only monetization systems that will need to be upgraded for compatibility with 5G networks. However, CSPs will still need to assess that existing monetization systems across the business will be prepared to support the 5G business models they plan to implement.

Billing systems, for example, should provide CSPs with the scalability to support large volumes of billing traffic. Moreover, they should also be capable of supporting several billing models including subscription billing and bill on first use. For those CSPs that will offer managed billing services, such as white-label billing, having a billing system that supports multitenancy will be essential to supporting these business models.

Similarly, CSPs should also ensure that they have a unified and federated product catalog to create consistency in service offerings across sales channels. CSPs that want to enable partners to create unique service bundles from CSP (and other partner) assets will need a federated product catalog where these services can be separated out from the main CSP product catalog.

### Reducing IT complexity will increase IT agility

The lack of a killer app for 5G means that in order to drive the uptake and monetization of 5G, CSPs will need to be able to push out new services and features to the market quickly to differentiate their offerings. Operating at such a fast pace, however, will require an agility that does not currently exist in many of the CSPs' IT systems.

Omdia's *ICT Enterprise Insights* survey indicates that there is a great deal of IT complexity across the BSS domain – which is a hinderance to IT agility. According to the survey, more than 40% of CSPs have more than 50 revenue management systems and nearly half of CSPs have more than 50 customer management systems. Managing such a large number of IT systems has an adverse effect on time to market. While today it typically takes months to bring new services to market, in the era of 5G, CSPs will need to bring new services to market in a matter of minutes or hours to compete.

CSPs can reduce IT complexity and improve IT agility by consolidating systems where necessary and by removing IT silos. Areas which are prime for consolidation to support the monetization of 5G include consolidating billing systems and CRM, as well as consolidating product catalogs.

### Embracing cloud delivery of IT will improve system scalability and agility

CSPs have been slow on cloud adoption, especially for systems within the BSS domain. However, as the need to reduce IT complexity and improve agility continues to grow, CSPs are feeling pressure to move IT systems off-premises and into the cloud. According to Omdia's *ICT Enterprise Insights* survey, 68% of CSPs plan to host at least one system within the BSS domain in the cloud in 2020. Of those, the majority will take a more conservative approach and host the systems in a private cloud environment.

Although many CSPs recognize the value of moving IT to the cloud, executing a cloud migration is a complex and arduous undertaking for any organization. Migrating such a high-impact domain as the BSS, adds another level of complexity for CSPs and puts even more pressure on them to get it right.

CSPs can minimize the risks of migrating monetization systems to the cloud by doing so in a strategic manner. CSPs should begin by assessing which systems will have the biggest impact on the organization's ability to monetize 5G. These may be systems that are directly tied to revenue generation, time to market, or customer satisfaction. Once these systems have been identified, CSPs should consider where the systems are within their lifecycle and whether the system is a candidate for migration, replacement, or retirement.

During the transition to the cloud, CSPs should also take advantage of cloud-native features such as microservices, containers, and auto-scaling where possible. Simply put, microservices architectures group an IT system's code based on business functionality, rather than technology. This enables the CSP to push out changes to the business on a much more frequent basis. An extreme example of microservices use is digital content provider Netflix, which has thousands of microservices releases per day. Containers (e.g., Docker) and containers orchestration platforms (e.g., Kubernetes) afford CSPs improved scalability of IT systems, while features like auto-scaling help manage the efficiency of cloud resources. Auto-scaling provisions cloud resources as they are needed, reducing operational costs. In addition to improving agility and scalability, cloud-native features like these are important because 5G will require CSPs to increase investment across the business and keeping capex and opex cost in control will be a top business priority for many.

Shifting to the cloud can be a challenging undertaking for any organization and many CSPs will feel compelled to take a conservative approach to the cloud. As CSPs make decisions on when and where to move to the cloud, striking a balance between business continuity and business value will be essential. In order to derive the most business value to drive the uptake and monetization of 5G services, CSPs may need to take a more aggressive approach to the cloud in some areas.

## Without embracing agile operating principles CSPs will fail to keep pace with the industry

Gaining IT agility is not just about making a technology change; it requires a cultural one too. System consolidation and moving IT to the cloud will enable CSPs to improve their scalability, better optimize their systems, and improve their overall agility and time to

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market. What exactly is agility? Are the IT systems the only things hindering time to market for CSPs? In many cases, the answer to these questions is no. While legacy IT can impede a CSP's ability to be agile and go to market quickly, these challenges are typically rooted in operational and cultural problems.

If an organization operates in silos – using waterfall decisioning – the ability to act quickly in the market and be agile will be significantly limited. “Fools with tools are still fools,” and CSPs, consequentially, should be investing in creating a culture that is conducive to business agility. This means embracing agile operating principles such as DevOps and continuous integration/continuous delivery (CI/CD). By making a cultural shift to a collaborative environment that embraces change, and commits to making frequent code releases and business improvements, CSPs can begin to realize the true benefits of the cloud and agile IT.

The biggest structural change that CSPs must address when implementing DevOps practices is that in an agile team, the structure must be cross-disciplinary, rather than across development-related silos (i.e., developers, testers, QA, security, DBAs, BAs).

CSPs can begin shifting to a DevOps operating model by starting with small changes and implementation practices as experience is gained. These small changes can then be used as a proof point to further expand the DevOps model throughout the organization.

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# Appendix

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## Methodology

The information included in this report is based on primary research gathered through interviews, discussions, and inquiries with CSPs and IT vendors. Information in the report also includes survey insights from Omdia's 2019 5G World Series Market survey, 2019 Digital Consumer Insights survey, and ICT Enterprise Insights survey. Secondary research from publicly announced contracts, partnerships, and previously published research including Omdia's Communications Provider Revenue and Capex Tracker and 2020 Trends to Watch: SoHo and SME Services were also used in the development of this report.

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## About Openet

Openet is a leading Digital BSS company that provides charging, policy and data management solutions. Since 1999 Openet has worked with many of the world's most innovative service providers to enable insight, monetization & control of data services.

Openet's products are built for 5G. They are designed to enable flexible policy and control, and monetization rules to be applied across different services and network slices. They also support policy and charging in the core and also at the 5G network edge. This agility enables operators to monetize different features of the network and open up new opportunities such as B2B, IoT, smart cities and industry 4.0.

As well as being 5G standards compliant, Openet products are cloud-native (available on public and private cloud). They are built on microservices, use Kubernetes and SBA, and are proven to support DevOps in CI/CD (continuous integration / continuous development) environments.

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