



## BUSINESS USE CASE

# Telecommunication Industry

NCache , In-Memory Distributed Cache for .NET

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## NCache for Telecommunications Industry

Telecommunications industry companies generate enormous amounts of big data about subscribers and telco usage activity. These companies have evolved from simple network centric organizations to complex data driven organizations. Telco's are constantly monitoring and upgrading their networks. Alongside the network exists backend applications which are just as important. However, many of these applications were not designed with big data and transactional loads in mind.

In-Memory Distributed Caching can revolutionize performance and scalability of systems to meet the ever-increasing demand of an always-available Telco world. NCache, an In-Memory Distributed Cache for .NET, can help you to achieve linear scalability and better customer experience. By scaling out in-memory caching clusters to multiple servers, NCache lowers your total cost of ownership (TCO). NCache is already in production with multi network operators (MNOs) and carriers resulting in tremendous performance boost, reduced downtime and more stable and scalable applications. Let's explore some use cases where NCache can increase your performance and scalability.

### Use Case: Better Network Management Using NCache

**Achieve network agility with low latency and high throughput using NCache**

Consumers expect powerful network performance and seamless experiences across all mobile platforms. This leaves service operators to face competitive environments with several challenges. You can have a powerful network by managing it effectively. With effective network management it can be analyzing millions of call detail documents every day, scaling application centric infrastructures or having increased throughput with budget constraints. Network management with agility is among the biggest challenges of the telco industry.

NCache's in-memory distributed caching and computing gives you extremely low-latency and high throughput, helping you analyze an ocean of data. Your .NET based network applications will scale easily and guarantee high availability in a seamless manner.

You can become more responsive to change using NCache by combining different systems, requirements and features. You can also bring inconsistent views of many products like postpaid devices and VAS into a single consolidated in-memory distributed NCache cluster. NCache comes out of the box with Grid Computing capabilities like MapReduce, Entry Processor Aggregator as well as has Pub/Sub Messaging and Database Synchronization features.

NCache currently has many production deployments in mission critical telco applications. NCache clusters are resilient to failure, support global high availability without data loss and topologies aware data partitioning. NCache clusters enable elastic up- and down-scaling of resources. This makes NCache an ideal in-memory distributed cache for the digital transformation occurring at your organization.

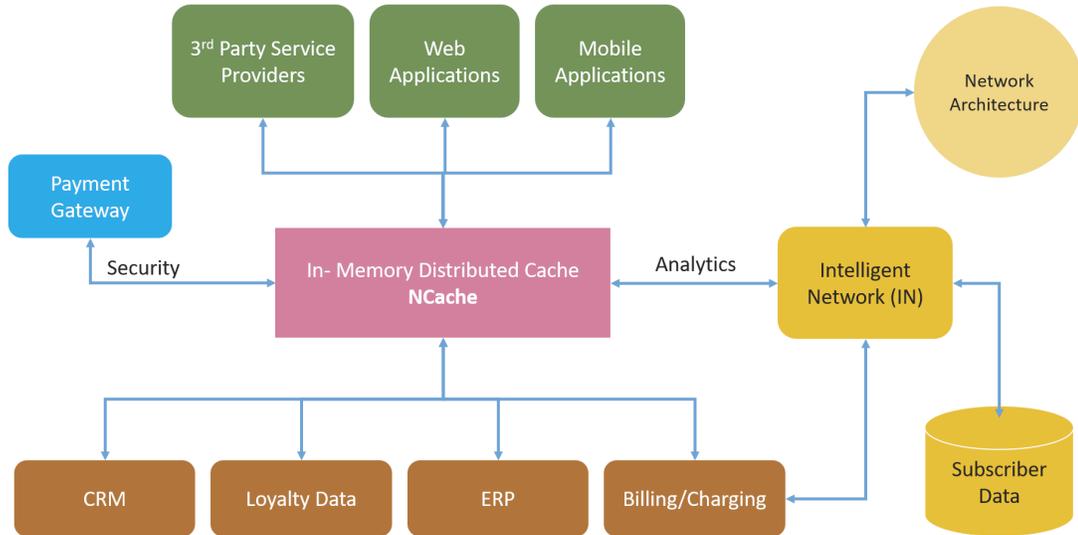


Fig-1 Telecom Industry Architecture - Connecting the Connected with Agility

## Use Case: Scaling Self Service Portals with NCache

Single customer view and centralize data access for consumers and partners

Self-service portals play a crucial role for Telcos. Using these portals, consumers can communicate with back office staff in a comfortable and flexible manner. Consumer interactions increasingly happen online, meaning future proof growth is compulsory in terms of high query throughput and interfacing with related systems and applications.

Delighting your customers in pre-sales/post sales processes requires convenience and 100% available access and control. NCache can play an active role with real time access to updated customer account data, along with a timely system recovery in case of a failover.

NCache enables a centralized view of your self-service portals for your own agents and partners/franchise owners.



## Use Case: Powerful Mobile-Commerce/Banking Solutions using NCache

### Reduce Load on your Backend data sources

Mobile money as a service is being adopted across the globe. Mobile money is accelerating remittances and their digitization. Telcos are busy with bringing financial inclusion to all consumers. This is being done using Software-as-a-Service (SaaS) applications, mobile and web portals. In all such solutions telcos must ensure ACID transactions. Imagine having the ease of scaling your mobile commerce platform without much need to rip-and-replace or do complex optimizations (Locking, Stream Processing, Pub/Sub Messaging using NCache).

NCache can enable mobile money solutions to leverage distributed and synchronized caching along with the ability to keep data in a separate process. NCache allows you to reduce the load on your backend data sources and prevents them from becoming scalability bottlenecks. NCache also has a distributed item locking mechanism that ensures dedicated access to the data and helps perform transactions. NCache is an ideal solution for solving the challenges of rising traffic and managing staggering loads of data requests. Telcos with mobile money solutions are using NCache to temporarily store all the common data that has been used over and over again and to save contention on backend data sources.

## Use Case: High Speed Messaging bus using Pub/Sub Features of NCache

### Highly available events platform & events based marketing

Complex software and hardware infrastructures sometimes prevent smooth app coordination across multiple systems. Such a need for app coordination is very common when using a Microservices architecture. The Publish Subscribe (Pub/Sub) architecture of NCache helps you build high speed messaging platform.

You can now make full use of a messaging platform and data sharing features, criteria-based searches and data driven events. Pub/Sub Messaging also helps in decoupling the existing architecture which allows each component to perform its tasks independently while also enabling structural variations between the source and target. Infrastructures can work with different throughput and structural variations without impacting each other.



NCache is suited both for reference data and transactional data. After data lands in an acquisition layer, NCache can also help stream the data for further processing like filtering or normalizing data. Finally, after transformed data lands in NCache’s in-memory distributed cache, multiple applications with different outcomes can consume data from NCache.

## Use Case: Upgrading Underperforming Legacy Systems using NCache

### Keeping pace with dynamic data transactions

Many systems in Telco infrastructures are unable to keep up with the pace of dynamic data transactions. It’s hard to make continuous architectural changes based on consumer and business use case demands. Underperforming systems can impact overall user experiences with telco related services and applications. Making architectural changes to meet requirements is expensive and performance/scalability remains paramount.

It makes a lot of sense to start utilizing NCache’s features to overcome such issues with minimum code change options. In a modern telco environment, data-centric services need to be built with elasticity and the ability to manage large spikes in demand without having to overprovision hardware or software licenses. NCache provides just that with telco grade availability and reduced latency.

NCache provides speed and performance enhancements which can linearly scale to millions of users. You can easily overcome the scaling and performance bottlenecks using NCache.

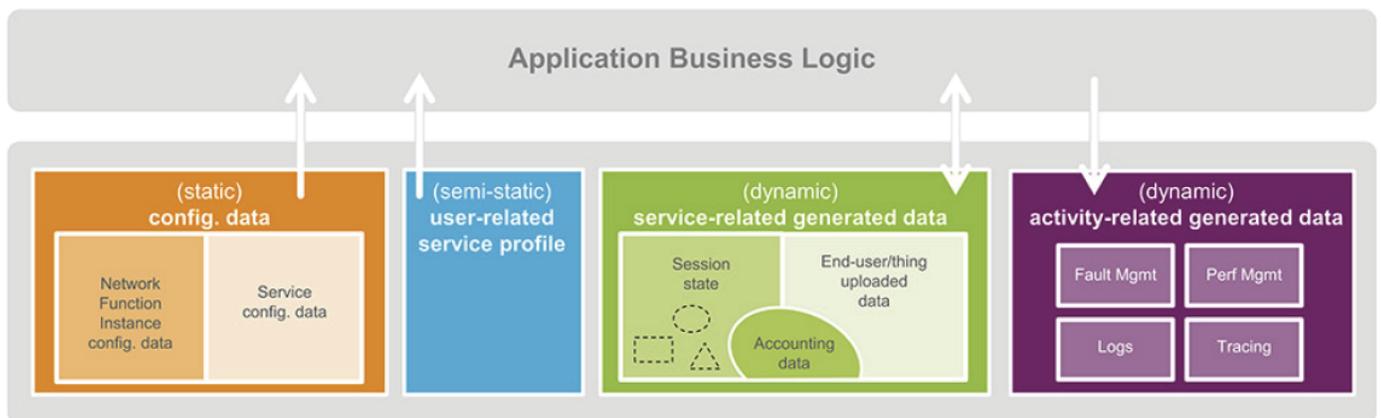


Fig-2 5G Cloud Data Layers (Source: Ericsson)

## Use Case: Efficient Machine to Machine Communication Using NCache

### Internet of Things and Edge Analytics

Telcos see a growing demand in Machine to Machine Communications and IoT use cases in different domains. Use cases range from fleet management and smart grids to vehicle telematics. Revenue opportunities are expanding in e-Healthcare, Digital Displays, Retail Kiosks, Vending Machines and Sensor Networks. Large volumes of data need to be collected from sensors and different machines. This data then needs to be processed in real time and the appropriate instruction needs to be set in order to be transferred back to device.

The back-and-forth communication needs in-memory storage and messaging platforms. A traditional disk-based database cannot fulfill the expectations regarding scalability, agility, volume and cost associated with IoT use case implementations. Telcos rely on NCache to get the best business value out of IoT. NCache with its flexible integrations and distributed data structure can enhance performance of your .NET applications and help you do edge analytics.

	Connectivity	Device	Application	Service provision	Systems integration
Description	Offer the network for transmission of data from IoT services	Offer the end-user module, with an embedded M2M chipset	Provide the actual applications that manage the data collected by the device	Manage the distribution, supply chain, fulfilment, billing and support	Provide system integration services Design/develop systems
Approximate share of value	5-30%	5-20%	30-60%	20-30%	<20%
Approximate EBIT margin	-10%	<5%	0-30%	0-10%	10%

## Why NCache

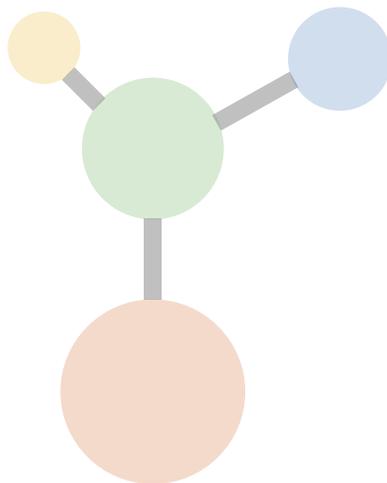
Telcos today require high performance databases and messaging platforms. Traditional databases typically cannot keep up with the volume, cost and agility required. NCache software stack is aimed at meeting these requirements. Data can be stored in Relational Databases or NoSQL databases and cached in NCache for fast retrieval.

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### About Alachisoft:

Alachisoft provides a popular high performance in-memory distributed cache called NCache. NCache is an Open Source middleware that runs in production environment and boosts performance and scalability of .NET web apps, SOA service apps, and general high traffic server apps. NCache has a 13 year proven track record with hundreds of customers all over the world and specially in US, UK, and Western Europe.

Visit our website at [www.alachisoft.com](http://www.alachisoft.com) or send email at [sales@alachisoft.com](mailto:sales@alachisoft.com)

You can download a free 60 days fully working trial of NCache from here: [www.alachisoft.com/ncache](http://www.alachisoft.com/ncache)