

# Enhancing Customer Interaction for Turkey's Mobile Users

## Turkcell migrates key application to x86 architecture powered by Intel® technology

With almost 34 million subscribers, Turkcell is not only the leading communications and technology company in Turkey, but also the third-largest mobile operator in Europe in terms of number of subscribers. The company prides itself on delivering innovation to mobile users across Turkey and beyond. Its products and services ensure easy access to data to enhance individual customers' lifestyles and boost the productivity of corporate subscribers with tailor-made business solutions.



### CHALLENGES

- **Optimize processes.** To ensure the business-critical transaction management application operates at peak performance to guarantee licensing efficiency
- **Reduce costs.** To find an alternative to high-end Unix platforms
- **Support growth.** To build a scalable IT platform to align with business expansion without generating excessive hardware costs

### SOLUTIONS

- **Smooth migration.** Turkcell chose to test an x86 platform based on the Intel® Xeon® processor 5570 as an alternative to its high-end Unix platform
- **Thorough evaluation.** Initial testing was verified on the replicated environment and supported by an in-house return on investment analysis

### IMPACT

- **Lower total cost of ownership.** The new platform is expected to be 44 per cent cheaper to run than the original high-end Unix platform
- **Enhanced application efficiency.** Performance increased by up to 35 per cent<sup>2</sup>
- **Customer satisfaction.** With enhanced transaction management capabilities, Turkcell can deliver faster service to its internal customers



"We carried out our own return on investment analysis prior to deployment of x86 architecture powered by Intel® technology and have calculated that we will see a 25 per cent decrease in the system's total cost of ownership in three years."

Zihni Uğurbil,  
Division Head of Infrastructure  
Operations and Project Sponsor, Turkcell

### Managing a large customer base

Millions of customers use Turkcell's mobile services, and they produce Call Data Records (CDRs) for each transaction. Around 19 billion CDRs are processed by the company's system weekly, enabling Turkcell to track its subscriber base and helping the marketing team design carefully targeted offers. To properly process CDRs, Turkcell uses an Extract, Transform, Load (ETL) software tool called Ab-Initio\*.

Zihni Uğurbil, Division Head of Infrastructure Operations and Project Sponsor, Turkcell commented: "In a competitive market like telecommunications, success is closely tied to operational efficiency. Efficient IT resources mean that we can make the right decisions to build on our profitability while ensuring that we deliver the high level of services that meet our customers' expectations."

A key challenge facing the IT team was the fact that its existing platform was based on a high-end Unix architecture, chosen to deliver reliable performance for Ab-Initio and other mission-critical applications. However, the platform – with more than 3,000 physical servers – was hard to run and maintain as purchasing new hardware was costly.

At the same time, Turkcell needed to reduce the licensing costs it paid for using the application, which were set by the number of physical servers upon which it was run. Adem Mecit, Senior Infrastructure Architect at Turkcell, added: "We needed to find an alternative IT model that would meet these requirements while enabling us to reduce both capital and operating expenditures. We therefore decided to look for ways to migrate our core applications to an x86 architecture to upgrade our platform in a cost-efficient way."



## Leading Telco optimizes customer transaction and revenue management with Intel® technology

### In-depth testing

A long-term customer of Intel in other areas of its business, Turkcell decided to evaluate the performance of an x86 platform powered by the Intel® Xeon® processor 5570 against its own criteria. It made use of a 16-node cluster based at Intel's Europe, Middle East and Africa headquarters.

Turkcell ran the Ab-Initio software on the server cluster, with a focus on testing for scalability, performance and availability. To speed up the process, Turkcell performed all testing in just one week, and found it could reach the same application performance for a much lower cost than with the mainframe platform. To verify the findings, Turkcell ran a second test on a different cluster at a US-based Intel site.

Devrim Yılmaz, Senior System Engineer at Turkcell, explained: "Migration from the high-end Unix platform to x86 architecture with Intel® technology was not a big issue for us from a technical point of view. The scale-out performance, reliability and availability factors were key in the final decision from an operations and business continuity perspective. Therefore, utilizing Intel Xeon processor 5570-based platforms in Intel EMEA and Intel US remotely, and working together with Intel and Ab-Initio engineers during in-depth testing helped us a lot."

By running the application on x86 architecture with the Intel Xeon processor 5570, Turkcell found that it could easily achieve scale-up and scale-out requirements. The usage performance increased by up to 35 per cent and availability was high enough to ensure continued operation even in the event of a node failure.

"Reliability is really a key factor for us. The performance increase by up to 35 per cent due to Intel Xeon processor 5570 was well above our expectations. The reliability of the Intel architecture in a scale-out platform was also key for us to decide to migrate one of our most mission-critical applications from a high-end Unix platform to x86 architecture," said Mustafa Altuğ Kamacı, Senior System Engineer at Turkcell.

Convinced that the new platform would deliver the required performance improvements it needed in its own production environment, Turkcell decided to deploy it immediately. The Intel® technology-supported x86 architecture would provide the reliable architecture needed to run the mission-critical Ab-Initio software workload, as well as other important applications currently running on its Unix environment.

Mecit added: "The performance, scalability and availability enhancements noted during the evaluation will translate into significant cost savings for Turkcell following deployment. Moreover, due to the company's existing hardware and software resources, which can be reused in the new environment, the return on the investment of the new architecture will be immediate."

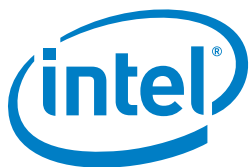
### Spotlight on Turkcell

Turkcell is the leading communications and technology company in Turkey with 33.9 million postpaid and prepaid customers and a market share of approximately 55% as of September 30, 2010. It provides high quality data and voice services to approximately 80% of the Turkish population through its 3G technology supported network and to 99.07% of the Turkish population through its 2G technology supported network. Turkcell reported TRY2.3 billion (\$1.5 billion) net revenue for the period ended September 30, 2010 and its total assets reached TRY14.5 billion (\$10.0 billion) as of September 30, 2010. Read more at <http://www.turkcell.com.tr/en>

### A competitive position

"This migration project will deliver real benefits not just to Turkcell as an organization, but to our customers as well," Uğurbil concluded. "With better performance at the application level, we will be able to track customer interactions faster and more accurately. This will enable us to engage more effectively with individual customers, offering them more compelling mobile services for example. Turkcell has positioned itself for continued success in the competitive mobile market in Turkey by investing in this platform migration for its mission-critical applications. Having the best-performing technologies in place now means that we are able to better align with our business priorities. Intel has played an important role in helping us achieve this."

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<sup>1</sup> <http://www.turkcell.com.tr/en/AboutTurkcell/corporateInfo/companyHistory>

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