

# About Netmanias.com

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# Netmanias.com Basic Information

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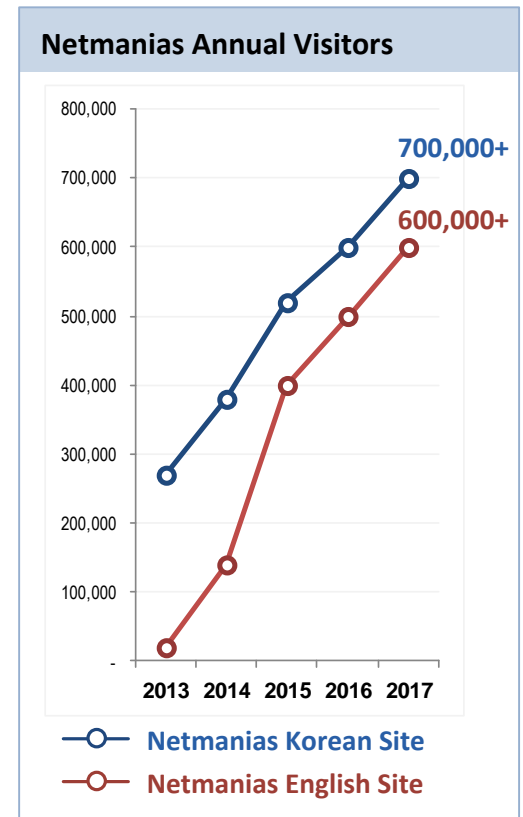
Section 5G 4G LTE C-RAN/Fronthaul Gigabit Internet IPTV/Video Streaming IoT SDN/NFV Wi-Fi KT SK Telecom LG U+ Network Protocol Samsung Korean Vendors

## Netmanias.com: The one and only portal dedicated to network and communication in Korea

Netmanias.com, a portal dedicated to network and communication founded in 2002, has been providing a venue for professionals in the industry to obtain and share knowledge on wired/mobile network service/infrastructure, latest trends and key technologies in the network and communication industry for the past 16 years. Netmanias.com's English site launched in 2012.

## Covered Topics: 5G, 4G, C-RAN/Fronthaul, Backhaul, Gigabit Internet, IoT, IPTV, SDN/NFV, Korea Operators

As of January 2018, Netmanias.com has more than 49,000 subscribers and 1,300,000 visitors annually.



As of January 2018, Netmanias Korean Site (www.netmanias.com/ko) has more than **32,000 Korean subscribers** and 700,000 Korean visitors annually.

As of January 2018, Netmanias English Site (www.netmanias.com/en) has more than **17,000 global subscribers** and 600,000 global visitors annually.

# Netmanias.com Contents

## Content Topics

### Network and Communication in South Korea - Services and Infrastructure

■ **Key topics relating to South Korean big 3 telcos: KT, SK Telecom, LG U+**

- World's best broadband/mobile services
- Infomographics on wired/wireless subscribers and their behavior patterns
- Innovative network architectures
- What made South Korea the world's best market?
- Strategies for network evolution
- Strategies for service evolution

### Wired/wireless network technologies in the local network

■ **Key topics**

- Wired/wireless network technologies employed in the local network
- Solutions and equipment from local vendors in the local network

### Analysis of key technologies

■ **Key areas**

- 5G, 4G
- C-RAN/vRAN/Fronthaul
- Backhaul/Backbone
- Optical Transport
- SDN/NFV
- IoT
- IPTV/CDN/OTT
- Gigabit Internet
- WiFi

## Content Types

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English 60 Tech-Doc.

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## Content Readers



**Netmanias' Korean Subscriber and Visitors**



**Netmanias' Global Subscriber and Visitors**

# Netmanias.com Contents Example (Korean)

## NETMANIAS REPORTS

http://www.netmanias.com/ko/?m=board&id=reports

	<b>세계 각국의 5G 현황 분석 (1) - 5G 표준화 현황</b> Global 5G Status (1) - 5G Standardization	Date: 02/20/2017 Tags: 5G	863 2
	<b>우리나라의 IPTV 시장 현황: 2016 Q3</b> Korea Communication Market Data: IPTV 2016 Q3	Date: 12/16/2016 Tags: IPTV, KT, LG U+, SK Telecom, Video Streaming	899 0
	<b>우리나라 이동 3사 LTE 주파수 할당 및 상용화 과정</b> LTE frequency commercialization status in Korea	Date: 11/30/2016 Tags: KT, LG U+, LTE, SK Telecom	2,282 0
	<b>우리나라의 조고속 인터넷 시장 현황: 2016 Q3</b> Korea Communication Market Data: INTERNET 2016 Q3	Date: 11/22/2016 Tags: Gigabit Internet, KT, LG U+, SK Telecom	1,147 0
	<b>우리나라 모바일 분야 시장 현황: 2016 Q3</b> Korea Communication Market Data: MOBILE 2016 Q3	Date: 11/19/2016 Tags: KT, LG U+, LTE, SK Telecom	1,754 0
	<b>데이터센터 상호연결 서비스를 위한 고객 가이드   차세대 DCI 구조: Private Optical Network 구..</b> DCI Architecture Evolution: Building Private Optical Network	Date: 11/16/2016 Tags: Data Center	1,997 0
	<b>KT 5G 마스터 플랜</b> KT 5G Master Plan	Date: 11/10/2016 Tags: 5G, KT	3,103 1
	<b>Korea Communication Review, October 2016</b> Korea Communication Review, October 2016	Date: 09/26/2016 Tags: IoT, KT, SDN/NFV, SK Telecom	1,331 0
	<b>SK Telecom COSMOS White Paper: Evolving Telco Data Center with Software-Defined Tec...</b> SK Telecom COSMOS White Paper: Evolving Telco Data Center with Software-Defined Technologies	Date: 08/17/2016 Tags: Data Center, SDN/NFV, SK Telecom	342 0
	<b>Korea Communication Review, August 2016</b> Korea Communication Review, August 2016	Date: 08/08/2016 Tags: 5G, Gigabit Internet, IPTV, IoT, KT, Korea, SDN/NFV, SK Telecom, Wi-Fi	2,477 0

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## NETMANIAS TECHNICAL DOCUMENTS

http://www.netmanias.com/ko/?m=board&id=techdocs

	<b>LTE 망에서 IP 주소 할당 방법 II: 두 도시 모델</b> IP Address Allocation Schemes II: A Case of Two Cities	Tags: IP Allocation, LTE	17,114 9
	<b>LTE 망에서 IP 주소 할당 방법 I: 기본</b> IP Address Allocation Schemes I: Basic	Tags: IP Allocation, LTE, PCO	33,112 15
	<b>LTE 과금: Offline</b> LTE Charging: Offline	Tags: CDR, Charging, LTE, OFCS, PCRF	19,143 10
	<b>넷플릭스 스트리밍 방식</b> Netflix ABR (Adaptive Bit Rate) Streaming	Tags: HTTP Adaptive Streaming, Netflix, OTT, Video Streaming	14,233 2
	<b>LTE Policy and Charging Control (PCC)</b> LTE Policy and Charging Control (PCC)	Tags: LTE, PCC, VoLTE	17,817 23
	<b>LTE EMM Procedure: 10/11. Toward Another City</b> LTE EMM Procedure: 10/11. Toward Another City	Tags: Attach, Detach, EMM, GUTI, LTE	13,811 2
	<b>LTE EMM Procedure: 8/9. Handover/Cell Reselection with TAU</b> LTE EMM Procedure: 8/9. Handover/Cell Reselection with TAU	Tags: Cell Reselection, EMM, Handover, LTE, TAU	15,018 5
	<b>LTE EMM Procedure: 7. Cell Reselection without TAU</b> LTE EMM Procedure: 7. Cell Reselection without TAU	Tags: Cell Reselection, EMM, LTE, SIB	17,689 16
	<b>WAN 가속화 기술 분석</b> Analysis on WAN Acceleration Technologies	Tags: Acceleration, Data Center, Deduplication, TCP Optimization, WAN	15,705 6
	<b>YouTube 비디오 요청 및 전달 방식 분석 (360p, 720p)</b> YouTube Video Delivery Process (360p, 720p)	Tags: Google, HTTP, HTTP Progressive Download, OTT, Video Streaming, YouTube	17,958 22

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## NETMANIAS TECH-BLOG

http://www.netmanias.com/ko/?m=board&id=blog

	<b>KT 인공지능 TV '기가지니 (GIGA Genie)' 출시 - AI 시장 경쟁 시작</b> KT unveils AI TV 'GIGA Genie', triggering fierce competition in the market	Date: 02/02/2017 Author: 도미선 @ Netmanias Tags: 5G, AI, Gigabit Internet, IPTV/UHD, IoT, KT	1,545 0
	<b>차세대 데이터센터 연결 (DCI) 구조: Private Optical Network 구축</b> Ciena's Proposal for DCI Implementation	Date: 01/02/2017 Author: 시에나코리아 Tags: Data Center	573 0
	<b>KT 소용인터넷 전략 - NB-IoT를 중심으로</b> KT's IoT strategy - focused on NB-IoT	Date: 01/02/2017 Author: 도미선 @ Netmanias Tags: IoT, KT, NB-IoT	2,612 1
	<b>통신사가 바라보는 5G 네트워크 기술과 산업 방향</b> 5G network technologies and future envisioned by telcos	Date: 12/21/2016 Author: 도미선 @ Netmanias Tags: 5G, IoT, KT, SDN/NFV, SK Telecom	3,015 0
	<b>SK 텔레콤 최진성 CTO의 Connected Car와 자율주행차에 대한 견해</b> SK Telecom's CTO Alex Choi's view on 5G Connected Car	Date: 12/06/2016 Author: 도미선 @ Netmanias Tags: IoT, SK Telecom	1,698 0
	<b>KT 5G 추진전략: 추진 상황, 시스템/단말, 서비스, 주요 기술</b> KT's 5G Strategy: Standard, System/Device, Services and Technologies	Date: 12/02/2016 Author: 도미선 @ Netmanias Tags: 5G, IoT, KT, KT 5G-SIG	3,901 3
	<b>통신사의 TV 매출액, 인터넷 서비스 매출액에 다가갔다 - KT와 LG U+</b> KT's TV Service Revenue quickly catching up with Internet Service Revenue	Date: 11/24/2016 Author: 손장우 @ Netmanias Tags: IPTV, KT, LG U+	2,497 2
	<b>SD-WAN 2.0: 기업 가상 사설망의 새로운 옵션</b> SD-WAN 2.0: Building A Better SD-WAN	Date: 11/09/2016 Author: Prayson Pate @ ADVA Optical Networking Tags: Data Center, SDN/NFV	1,591 3
	<b>SK 텔레콤의 첫 LoRa 상용서비스 출시, 그리고 2016 IoT 국제 전시회에서 소개한 IoT 서비스들</b> SK Telecom's IoT services introduced at the 'IoT Korea Exhibition 2016'	Date: 11/07/2016 Author: 도미선 @ Netmanias Tags: IoT, LoRa, SK Telecom	3,697 3
	<b>오픈 하드웨어와 소프트웨어로 통신사업자의 유선 액세스망 구축하기</b> Building Software Defined ISP Using Open Hardware and Software	Date: 09/28/2016 Author: Reza Toghraee @ ArpaWare Tags: Gigabit Internet, SDN/NFV	2,269 0
	<b>오픈 네트워킹, 화이트 박스 스위치 - 이제는 현실이다.</b> Open Networking, White Box, Bare metal Switches What are the Risks?	Date: 09/27/2016 Author: Reza Toghraee @ ArpaWare Tags: Data Center, SDN/NFV	2,049 0
	<b>SK Telecom의 SDRAN (DU 기능 분리 및 서버화) 상용망 검증 - 5G를 위한 큰 걸음</b> SK Telecom and Nokia Implement World's First Cloud-based Radio Access Network in a Commercial LTE Net...	Date: 09/25/2016 Author: 손장우 @ Netmanias Tags: 5G, C-RAN/Fronthaul, LTE, SDN/NFV, SK Telecom	5,238 0
	<b>Opinion: 북유럽의 전통 강호들 (에릭슨, 노키아)이 중국의 신룡 거대 세력 (화웨이)의 독주를 막...</b> Can Nordic rivals stop the Chinese juggernaut?	Date: 09/14/2016 Author: Rajat Kochhar @ Ericsson Tags: 5G, IoT, LTE	3,616 2

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# Netmanias.com: Contents Sample (English)

[SK Telecom' 5G R&D Activities and Ecosystems - 2016 Q3](#)

[Nokia's D-RAN/C-RAN Evolution Architecture](#)

[5G IOT Security](#)

[AT&T's CORD - the ultimate architecture born after decades of innovation in the communications network](#)

[5G Internet of Things](#)

[SDN/NFV-based vCPE Services by AT&T, Verizon and KT](#)

[Who will be the world's first operator to deploy a nationwide IoT network?](#)

[How ready is KT for 5G Olympics?](#)

[Network Architecture Evolution from 4G to 5G](#)

[Brief Survey - Operator's View on 5G C-RAN/Fronthaul Redefinition](#)

[E2E Network Slicing - Key 5G technology : What is it? Why do we need it? How do we implement it?](#)

[KT 5G Network Architecture](#)

[Mobile Network Architecture for 5G Era - New C-RAN Architecture and Distributed 5G Core](#)

[5G network as envisioned by KT - Analysis of KT's 5G network](#)

[5G POC \(Test, Trial\) Status in Korea](#)

[KT's E2E 4G LTE and FTTH Network Architecture](#)

[Netmanias Interview with KT at MWC 2015: KT's demonstrations of LTE-H and LTE-U](#)

[SK Telecom's Network Evolution Strategies \(3\) - RAN Architecture Evolution Strategy](#)

[SK Telecom's Network Evolution Strategies \(2\) - Inter-cell Coordination Evolution Strategy](#)

[SK Telecom's Network Evolution Strategies \(1\): Carrier Aggregation Evolution Strategy](#)

[LTE RAN Architecture: Cell site and LTE BS, B/F-Hauling, Coordination, Comparison and Case Study](#)

[HFR's Mobile Fronthaul Solutions for LTE-A Era](#)

[Netmanias Interview with HFR - Fronthaul Solutions for LTE/LTE-A C-RAN \(Cloud RAN\)](#)

[Evolution of Mobile RAN Architecture in LTE/LTE-A Era \(C-RAN\)](#)

[Fronthaul Size: Calculation of maximum distance between RRH and BBU](#)

09/19/2016

09/13/2016

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09/18/2015

09/04/2015

03/30/2015

10/27/2014

10/13/2014

10/07/2014

08/06/2014

08/01/2014

05/27/2014

04/16/2014

04/01/2014

The screenshot shows the Netmanias website interface. The main article is titled "E2E Network Slicing - Key 5G technology : What is it? Why do we need it? How do we implement it?". Below the article title, there is a table titled "Table 1. Most compelling use cases for 5G".

5G Use Case	Example	Requirements
Mobile Broadband	4K/8K UHD, hologram, AR/VR	High capacity, video cache
Massive IoT	Sensor network (metering, agriculture, building, logistics, city, home, etc.)	Massive connection (200,000/km <sup>2</sup> )
Mission-critical IoT	Robotics control, autonomous driving, automated factory, smart-grid	Mostly immobile devices Low latency (175 ms, motion control 1 ms) High reliability

Below the table, there is a diagram titled "Figure 1. Network slicing: Why do we need it?". The diagram illustrates the transition from a single 4G network to multiple 5G networks through network slicing. It shows how a single 4G network is divided into multiple 5G networks, each serving different service/device and service/industry requirements. The diagram includes labels for "4G network", "5G network", "Service/Device", "Service/Industry", "Mobile Broadband", "Mission-critical IoT", and "Massive IoT".



# Netmanias.com Korean Subscribers

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90@Comtec.co.kr              33@Lgcns.com  
86@Lgcns.com                 ...  
78@Lgntel.com

**50+ companies**

## ■ Vendors

**3,131**  **Subscribers@Samsung.com (SEC)**

**916**  **Subscribers@Lge.com**

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80@Dasannetworks.com + 37@Telcoware.com  
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63@Innowireless.co.kr      30@Kisantel.co.kr  
59@eluo.com                  26@Esmec.com  
54@lgericsson.com          27@woori-net.com  
63@Contela.com              26@Telefield.com  
56@ubiquoss.com            26@modacom.co.kr  
61@Ntels.com                 20@Sysmate.com  
50@Solid.co.kr                28@gctsemi.com  
54@Innowireless.com      22@amtel.co.kr  
48@humaxdigital.com      23@Kaonmedia.com  
48@Uangel.com               19@Coweaver.co.kr

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17@Samji.com  
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14@Tellion  
14@handream.net  
13@everytalk.co.kr  
11@Rfwindow.com  
11@Wins21.co.kr

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14@Lghitachi.co.kr  
12@Juniper.net (한국인)

... **50+ companies**

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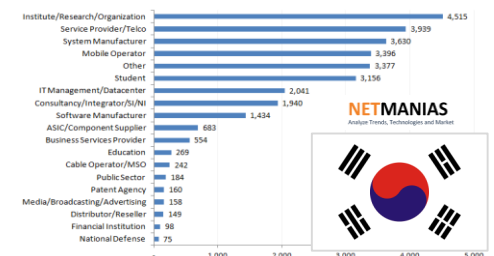
177@kaist.ac.kr  
155@yonsei.ac.kr  
96@Snu.ac.kr  
202@korea.ac.kr

... **60+ ac.kr**

**Highly focused on network and communication industry**


## Netmanias Korean Subscribers


**32,000+**




# Netmanias.com Global Subscribers

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**107**  **Subscribers@att.com**

**095** **verizon** **Subscribers@verizon/verizonwireless.com**

... **150+ companies**

## ■ Global Vendors

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**702**  **HUAWEI** **Subscribers@huawei.com**

**294** **CISCO** **Subscribers@cisco.com**

**134**  **Subscribers@intel.com**

**117** **ZTE中兴** **Subscribers@zte.com**

**072** **QUALCOMM** **Subscribers@qti.qualcomm.com**

... **300+ companies**

## ■ Global SI/NI

**217** **Subscribers@techmahindra.com**

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**127** **Subscribers@hcl.com**

**090** **Subscribers@globaledgesoft.com**

**085** **Subscribers@wipro.com**

**071** **Subscribers@Inttechservices.com**

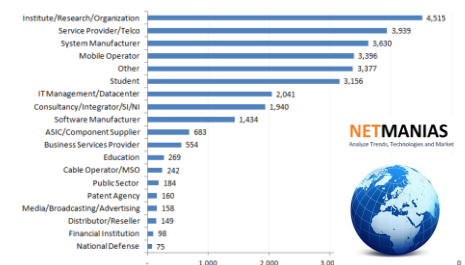
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... **100+ companies**

**Highly focused on network and communication industry**

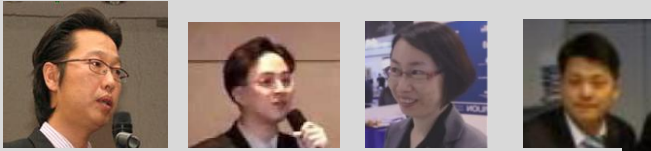
### Netmanias Global Subscribers

**17,000+**



## All with more than 16 years of experience in the fields

### Four editors



Harrison J. Son   Chris Yoo   Michelle M. Do   Tomas Shin

#### Select topics and create content

- All with 16+ years of experience in network consulting for local and global clients
- 30+ contributors

#### Internally, we:

- Analyze the latest global and local trends and technologies
- Discover key content topics

#### Externally, we:

- Communicate with global and local vendors on a regular basis
- Attend global and local conferences and exhibits and interview key figures

### Site development and operation



Leon Choi   Soojung Lee

#### Platform development

Dedicated to development and operation of Netmanias.com for the past 12 years

#### Platforms developed

- Content management system
- Subscriber management system
- Target marketing system: Analyze Subscriber behavior patterns through interworking of the above two systems

### Content globalization



Yoonhee Son

#### One in-house linguist for content globalization

- Dedicated linguist in Seattle, WA, USA
- With + 15 years of experience in IT globalization and localization (Google, Microsoft, Tableau, etc.)
- Translating all content posted on Netmanias.com for the past five years



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**Ejaz - Muhammad Sial**  
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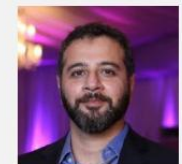
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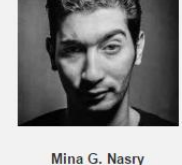
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at Telefónica Brasil (TelefónicaVivo)



**Andreas Hipp**  
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**Mina G. Nasry**  
Network Engineer, Core Team  
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