

The Evolution of the NOMS-IM Symposia Series: From a Gleam in the Eye to Multiple Technical Activities

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Published online: 13 October 2007
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Abstract This report documents the evolution of a number of symposia, along with the evolution of the associated communities. These communities launched the initial conferences, as well as benefited from the growth and evolution of these technical activities. Over the span of a couple decades, the communities grew in breadth and depth. The communities are truly global in both constituency and reach. Both symposia convene in multiple countries within multiple continents, and continue to attract new audiences. In addition, new multiple symposia series were spawned by the communities, and the richness of the technical activities and venues affords the communities enhanced value and interactions.

Keywords Network · System · Enterprise · Management · Symposium · Evolution · NOMS · IM · IPNOMS · LANOMS · MANWEEK

1 Introduction

Now approaching the start of their third decade of existence, the IEEE/IFIP Network Operations and Management Symposium (NOMS) and the IFIP/IEEE International Symposium on Integrated Network Management (IM, formerly known as ISINM) [1] remain the world's premier conferences on management of networks that span the telecommunications and computing areas. They are now both organized by the IEEE Communications Society (ComSoc) Committee on Network Operations and Management (CNOM) and the IFIP Working Group 6.6 on Network Management. NOMS meets in even-numbered years, typically within the February through April time period, and IM meets in odd-numbered years, typically during

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May. These symposia feature world-class programs with high-quality technical sessions, timely tutorials, visionary Distinguished Experts panel discussions as well as topic-specific panel sessions, renowned keynote speakers, poster sessions on emerging topics, and product and technology exhibits ranging from topics undergoing R&D investigation to commercial products.

The technical focus is on the pivotal role network and systems management play in worldwide information networks and distributed systems that cross geographical and political boundaries. Such networks and systems extend beyond fixed, physical and traditionally tethered boundaries to support virtual corporations, virtual LANs, inter-enterprise internetworking, real and virtual service management, outsourcing, mobile devices and electronic commerce. Symposia topics and tutorials always evolved to track, and to be harbingers of trends within the network and enterprise systems management community. For example, as protection of managed and management systems maintaining mission-critical information became crucial to the success and continuity of interconnected enterprises, security management emerged as a topic of significant concern. The technical papers submitted regularly show an excellent mix of emerging topics, organizations, and international contributions, addressing the well-established interest in overall management solutions across all types of networks, enterprise communication systems, distributed computing systems, and applications.

The NOMS series was inaugurated in 1988 in New Orleans and the IM (ISINM) series was inaugurated in 1989 in Boston. While the early tradition of these symposia was to locate venues within the USA, in due time the growing global focus of the network and systems management community made it clear that the time had come to begin moving to symposia venues well beyond the traditional sites, the 10th NOMS met in Vancouver in 2006, and the 10th IM met in Munich in 2007. Both symposia continued evolving globally, by growing the international participation, as well as by introducing global venues, such as Japan, Italy, Korea, France, Canada, and Germany. NOMS 2008 will meet in Brazil.

In addition, in order to provide greater opportunities for an expanding world-wide audience of network and services management professionals and students, the network operations and management community developed two regional symposia, the Asian Pacific NOMS (APNOMS) and the Latin American NOMS (LANOMS). While regional in venue, these symposia still attracted a global audience to complement the primarily regional audience. As global citizens, both NOMS and IM track the technical developments within academia, the private enterprise, and public telecom management world, and also reflect on the economic, government and business environments throughout the past couple decades. These important links among technology, research, academia, business, and government enterprises keeps NOMS and IM well-grounded, and helps retain their premier value to our professional constituencies.

2 Important Trends

During the past 20 years, a sea change of advancement has occurred in the enterprise, communications, and information technology management world. While initially it was industry-centric and particularly telecommunications-centric

(i.e., emerging from the “old Bell System”), we are now engaged in truly global activities involving participants from dozens of countries, industry sectors and technology disciplines. The topic areas have expanded as well. We have stronger academic participation and multiple industry segments contribute to our success. These industry segments include computing, communication, and users from just about every industry (e.g., energy, financial, transportation, technology, manufacturing, etc.) and many government agencies.

Speaking of industries, it is also important to observe the influence of the general economy on the series. While during the 1980’s and the 1990’s the economy grew to a high of over 1,500 in the S&P 500 (March 2000), the S&P 500 declined to less than 800 in October, 2002. The NASDAQ declined from over 5,000 to 1,100 during that same period. As a result, in 2001, 2002, and 2003 our symposia generated the smallest attendance. While the S&P 500 is back to 1,500 territory, NASDAQ is still in the 2,500 area—still some 50% less than the 5,027 peak achieved in 2000. The recovery years, 2004–2007, demonstrate a return to typically 300–400 participants which is remarkable due to the difficult economy, the challenging geopolitical landscape and the establishment of regional, sister symposia in the Asia Pacific Oceana and Latin America arenas.

3 Methodology

In assembling the information for this article it became clear that our community continually improved the quality of information and knowledge capture about the NOMS and IM symposia via enhanced symposia websites as well as through the Journal of Network and Systems Management (JNSM) [2] that captured summaries of our events since the mid-1990. Also, members of our community are increasingly more familiar with recent symposia.

On the other hand, it was increasingly difficult to capture the early history and events that led to the genesis of our symposia series. Hence, we concluded that the most value to the community would be to capture herein that early knowledge. We set out to provide further detail on those early events that spawned the multiple symposia series that we are enjoying today. Capturing this information was done by one-on-one discussions and review of proceedings and programs of those early events.

4 Symposia Timeline [from year 2001—<http://www.comsoc.org/conf/im/index.html>]

NOMS 1988: Circa 1986 the IEEE Committee on Network and Operations Management (CNOM) was founded by Doug Zuckerman, Bruce Kiebertz, Ken Lutz, and others. Recognizing the need for professionals to interact in this emerging area, this telco pioneer group set out to plan for the first NOMS 1988 in New Orleans. Bruce was its first General Chair, and Doug was its first Technical Program Committee Chair. With significant enthusiastic support from Fred Andrews

(Bellcore) and Larry Bernstein (AT&T Bell Labs), both Vice Presidents and with solid ComSoc ties, strong industry support resulted in a very successful meeting with over 700 participants; it would have been more but hotel space limitations capped the number of potential attendees, with many being turned away. The theme was, “Productivity through Operations.” The proceedings were published by the IEEE [3].

IM 1989: Independently, around 1988, the International Federation of Information Processing (IFIP) Working Group 6.6 visionaries (Kim Kappel, General Chair IFIP WG6.6; Branislav Meandzija, and Wolfgang Zimmer Technical Program Committee (TPC) Chairs) saw the need for the world-wide network management community to gather into a symposium to share information about this emerging technology and research area. To affect their vision, they approached other leaders in the community to organize and to host such a symposium. Paul Brusil, Chair of the Open System Interconnection Network Management Special Interest Group and Principal Scientist at The MITRE Corp, accepted the challenge to chair the First International Symposium on Integrated Network Management (ISINM). He brought on Dan Stokesberry of the National Bureau of Standards (NBS), now the National Institute of Standards and Technology (NIST), as symposium Vice Chair. As symposium sponsors, both organizations, The MITRE Corp and NBS, provided resources and/or start-up funding to seed the activity. Branislav Meandzija and Jill Wescott were TPC Co-Chairs. Leaders in the field were recruited as Organizing Committee (OC) chairs, TPC members, Vendor Program chairs, and Tutorial Program chairs. Tutorial programs were assembled with the participation of numerous industry leaders such as James Herman, noted analyst and consultant. Keynote presenters such as Dr. Vinton Cerf kicked off each day’s program.

To help stimulate the development of the emerging commercial marketplace for network management technologies, key vendors of the time like AT&T, Digital Equipment Corp, IBM and many others were approached to participate in the program. They were given opportunities to explain their emerging directions toward initial commercial network management products. Attendees benefited by understanding how the marketplace would emerge and evolve. And, in mutual benefit, attendees offered feedback, suggestions, and insights to vendors.

With the Technical Program, Tutorial Program, and Vendor Program coming to fruition, Brusil and Stokesberry took up the idea of mutual-benefit by inviting participants and known bodies worldwide that were working on aspects of network management to present their views, to learn of the workings of other bodies, to learn about the distributed, world-wide community, and to discuss topics and strategies for moving all aspects of the network management field forward. Representatives from formal bodies ANSI, CCITT, Corporation for Open Systems, European Workshop for Open Systems, IEEE, IETF, ISO, POSIX, and numerous other bodies joined the community’s conference. Representatives from other regional and local conferences being arranged on specialized network management topics were given opportunities to describe and to promote their events.

Over 650 attendees from nearly three dozen countries from all the populated continents came together to focus attention on the burgeoning field of network management. In affirmation of the broad international appeal of the inaugural

ISINM, Brusisl's welcome message was presented in 31 different languages. In testament to the quality of the technical papers accepted to the symposium, the papers began being published as formal IFIP Transactions in hard-bound form by North Holland Publishing [4] (and for later IM symposia by Chapman and Hall Publishing [4] and then IEEE Publishing [4]). Beyond the organized program, there seemed to be an insatiable desire by all to maximize the amount of information transfer about the goings on in network management. Many attendees chose to form ad hoc Birds-of-Feather (BOF) sessions to discuss some of the most current topics that were so new the topics could not have been incorporated into the formal program of the Symposium.

While many attendees were "competitors"—whether in standards development or product development—a mutually-beneficial, congenial, neutral atmosphere arose and to this day set the tone for all future occurrences of the Symposium. The attendees and the press declared the first IM a whopping success.

NOMS 1990 met in San Diego. The General Chair was Bob Aveyard (AT&T Bell Labs), the Vice General Chair was Doug Zuckerman (AT&T Bell Labs), and the TPC chair was Ken Lutz (Bellcore) with approximately 600 participants. By now, several strong supporters from the Bell Labs days had taken on new corporate leadership roles in several of the "Baby Bells." Fittingly, Jack Appel, who had moved to Pacific Bell from Bellcore, arranged for strong support from San Diego's home telephone company, Pacific Bell. The Baby Bells and their growing number of diversified systems suppliers were all in "expansion" mode, and viewed OSS infrastructure as the key to increased revenues and reduced costs. Along the lines of expanding infrastructure scope, *NOMS '90* initiated a technical session on "billing" and a tutorial on "security," topics which were some years ahead of their time but which ultimately blossomed.

IM 1991 met in Washington, DC. Kim Kappel (Georgia Tech), and Branislav Meandjia (MetaAccess) were the General Chairs, and Iyengar Krishnan and Wolfgang Zimmer were the TPC Chairs. The Theme was "Managing Global Information in the 90's". The IM strategy and programming were first tweaked in forming *IM 1991*; but, the over-riding philosophy of mutual participation and mutual benefit to all in the community was never changed to this day. Indeed, any new organizations that entered any place in the network management community were invited to participate to their fullest. New organizations like the TeleManagement Forum (now known as the Telecommunications Management Forum) were quickly approached and become important cogs in future IMs.

To enhance the spirit of continuity and of mutual cooperation, support and promotion across the entire management community, it was decided that the Program Committee meetings of the early IM symposia would begin meeting in conjunction with the newly established workshop series on specialized management topics called DSOM (Distributed Systems Operations and Management). DSOM was combined with four other workshops into the Management Week series that was inaugurated by MANWEEK 2005 in Barcelona, Spain [5]. Raouf Boutaba (University of Waterloo) has a lead role in MANWEEK, which subsequently met in Dublin, Ireland (MANWEEK 2006) and in San Jose, CA (MANWEEK 2007).

Furthermore, at the Second IM Paul Brusil took the initiative to approach the IEEE's telephony-oriented NOMS lead by Doug Zuckerman and others to examine how the two symposia series might be able to establish a positive, synergistic relationship. The IFIP and IEEE symposia groups welcomed collaboration and co-existence. They decided to establish an IEEE and IFIP relationship, to coordinate an interleaved, biennial, non-conflicting schedule for NOMS and IM so that every year there could be an international network management focused symposium. The ideas of cross-pollinating and cross-supporting the NOMS and IM efforts were warmly received, and have since proven essential for the field.

NOMS 1992 met in Memphis, Tennessee with Doug Zuckerman as the General Chair. The TPC Chair was Alan Johnston (AT&T Bell Labs) with attendance of approximately 600 participants. As another show of the community-enveloping nature of the symposia series, it was during NOMS 1992 that we discussed the idea of the Journal of Network and Systems Management (JNSM) with Manu Malek as Editor-in-Chief. The JNSM report section with Paul Brusil as the cognizant editor contains summary details of NOMS and IM symposia and served as a major source for this commemorative article. Doug Zuckerman introduced Joe Betser (The Aerospace Corp.) to Branislav Meandzija (UC Riverside), the General Chair of IM 1993. A memorable offsite event was held at Graceland, which had been the home of Elvis Presley (there were rumors that he was still alive and would be willing to serve as a future keynote singer).

IM 1993: As a result, Joe Bester was approached to lead the vendor program for IM 1993 that was scheduled to meet in San Francisco with Branislav Meandzija (MetaAccess) as General Chair and Yechiam Yemini (YY, Columbia University) and Heinz-Gerd Hegering (Tech. Univ. Munich) as the TPC Chairs. Betser devised a unique vendor program for this event that incorporated a novel concept of 5 "technology centers". He recruited technology leaders to lead their respective technology centers. The technology centers and their leaders were: SNMPv2 (Steve Waldbusser, CMU), OSI (Paul Brusil, MITRE), Applications (Dave Mahler, Remedy), Omnipoint (Jim Warner, NMF), and RMON (Mike Erlinger, Harvey Mudd College). Also incorporated was a live network on the floor of the conference. Thirty-nine vendors were recruited to participate in the technology centers and exhibits. The technology centers provided a technical demonstration focus to IM 1993 and are largely credited with the attendance of over 1,200 people at the conference. Many in the community saw the technology centers as unparalleled in scope and value to the community and viewed them as high-water-mark benchmarks for future symposia. The conference included the traditional technical program with technical sessions as well as tutorials before and after the conference. In addition, there was also a vendor presentation thread during which the vendors described their technologies.

In testament to the growing realization that not just the technical papers from both symposia were of archival quality, the JNSM began providing the opportunity for the symposia to report on many of the aspects of their programs (e.g. keynote presentations, distinguished expert panels, BOFs and so on) that were not captured in the formal symposia proceedings or announced with few details in the symposia

programs. As such, the following symposia were described in more detail in JNSM and since 2001 also in: <http://www.comsoc.org/confs/im/index.html>

Hence, the following descriptions are shorter and highlight major developments and enhancements to the symposia series.

NOMS 1994 met in Kissimmee, FL with Bob Steen (IBM) and Doug Zuckerman (AT&T Bell Labs) as General Chairs and Shri Goyal (GTE) as TPC Chair. The meeting was attended by approximately 600 participants and included all the traditional parts of the program. The theme was “It’s a Small World—Networking in the 90s”

IM 1995 met in Santa Barbara, CA with approximately 600 participants. The General Chairs were Wolfgang Zimmer (GMD-FIRST) and Doug Zuckerman (AT&T Bell Labs). For the first time in the life of the NOMS and IM Symposia, leadership from both the IFIP community (Wolfgang) and the IEEE community (Doug) were co-chairs of the same symposium. The TPC Chairs were Adarshpal Sethi (University of Delaware) and Yves Raynaud (Université Paul Sabatier). The theme was “Rightsizing in the Nineties.”

NOMS 1996 was the first meeting of the series that met outside the United States. It met in Kyoto, Japan with approximately 600 participants. Ejiri san had a key role in this development. The conference was heavily supported by the telco industry in Japan and Asia-Pacific. The General Chairs were Masayoshi Ejiri (Fujitsu) and Shri Goyal (GTE) and the TPC Chairs were Hugh Dysart (Bell-Northern Research) and Satoshi Hasegawa (NEC). The theme was “Managing the Global Information Age.”

IM 1997 met in San Diego, CA with over 600 participants. The General Chair was Seraphin Calo (IBM) and the TPC Chairs were Aurel Lazar (Columbia University), Roberto Saracco (CSELT Italy), and Rolf Stadler (Columbia University). The theme was “Integrated Management in a Virtual World”. Seraphin became General Chair sadly due to the passing of Dan Stokesberry, who had initially held the position. It is of note that in subsequent years, the community established an award in Dan’s memory.

APNOMS 1997 was the inaugural meeting of the *Asian-Pacific NOMS (APNOMS)*, meeting in Seoul, Korea. The General Chair was Jong-Tae Park (Kyungpook National University, Korea), the Vice-Chair was Yoshiaki Tanaka (Waseda University, Japan) and the TPC Chairs were Seong-Beom Kim (Korea Telecom, Korea) and Yukio Hashida (NTT, Japan). The theme was “Toward Global Network Management”. The APNOMS series has been very successful since and meets annually in Asian-Pacific venues at a later time of year than NOMS and IM. More details on the APNOMS series are provided below.

NOMS 1998 returned to New Orleans for its tenth-year with almost 600 participants. The General Chair was Veli Sahin (Samsung Telecom) and the TPC Chair was Shaygan Keradpir (GTE).

IM 1999 also returned to its birth place in Boston, MA for its tenth-year anniversary, Nearly 600 participated. The General Chair was Seraphin Calo (IBM) and the TPC Chairs were Morris Sloman (Imperial College) and Subrata Mazumdar (Lucent–Bell Labs). In a testimonial to the success and growth of IM, the initial IM convener, Paul Brusil, returned to the podium to celebrate the strength of the NOMS/IM venture, to remember the significant contributions of Dan Stokesberry in

ensuring early symposia successes, and to award the second Dan Stokeberry Memorial Award to Morris Sloman.

Latin American NOMS (LANOMS) 1999 had its inaugural conference in 1999 in Rio de Janeiro, Brazil. Carlos Becker Westphall served as the General Chair and the TPC Chair. The Vice TPC Chairs were Luiz Fernando Kormann and Mirela Sechi Moretti Annoni Notare. LANOMS is a successful event and continues to meet every other year. More details on the LANOMS series are provided below.

NOMS 2000 met in Honolulu, Hawaii with over 600 participants. The General Chair was Doug Zuckerman (Bellcore) and the TPC Chairs were James W. Hong (POSTECH) and Robert Weihmayer (GTE Labs). The theme was “The Networked Planet, Management beyond 2000”.

IM 2001 met in Seattle, WA. The General Chair was Wolfgang Zimmer (GMD-FIRST) and the TPC Chairs were Nikos Anerousis (Voicemate) and George Pavlou (University of Surrey). The theme was “Integrated Management Strategies for the New Millennium”. At that point the conference had approximately 300 participants after the burst of the “.com” bubble, and the symposia series was challenged to attract participants because of the challenges faced by the high-technology industry. The conference theme aptly reflects the disruption that fell upon our community.

NOMS 2002 met in Florence, Italy. The General Chairs were Enrico Bagnasco (Telecom Italia Labs) and Veli Sahin (Marconi Communications) and the TPC Chairs were Rolf Stadler (KTH) and Mehmet Ulema (Manhattan College). The theme was “Management Solutions for the New Communication World.” We had nearly 300 participants as the economic and geo-political situation was still challenging.

IM 2003 met in Colorado Springs, CO. The General Chair was Doug Zuckerman (Telcordia) and the TPC Chairs were Germán Goldszmidt (IBM Research) and Jürgen Schönwälder (University of Osnabrück). The theme was “Managing It All.” Participation was approximately 200. This was heavily influenced by the economic and geopolitical challenges as well as by the SARS (Severe Acute Respiratory Syndrome) epidemic situation. In fact, some participants who actually registered were not allowed to travel.

NOMS 2004 met in Seoul, Korea. The General Chairs were Young-Hyun Cho (KT) and Masayoshi Ejiri (Fujitsu) and the TPC Chairs were Raouf Boutaba (University of Waterloo) and Seong-Beom Kim (KT). The theme was “Managing Next Generation Convergence Networks and Services.” Participation was well over 400. James Hong was a key contributor to its success recruiting heavy support from Korea Telecom and local industry. This conference saw the introduction of the Application Sessions which consist of annotated charts, the same format as the original NOMS. At the same time, Raouf Boutaba kicked off the IEEE Communications Society’s electronic journal, e-TNSM (Transactions on Network and Service Management).

IM 2005 met in Nice, France, the first time outside the United States. There were over 300 participants, and the conference saw good support from France Telecom and other industry patrons. The General Chairs were Seraphin Calo (IBM) and Roberto Kung (France Telecom) and the TPC Chairs were Alexander Clemm (Cisco Systems), Olivier Festor (LORIA-INRIA) and Aiko Pras (University of Twente).

The theme was “Managing New Network Worlds.” The venue also provided an opportunity for IM attendees to attend the TMF’s TeleManagement World, which was taking place at the same time (and vice versa).

NOMS 2006 met in Vancouver, Canada. The General Chair was Raouf Boutaba (University of Waterloo) and the TPC Chairs were Joe Hellerstein (IBM) and Burkhard Stiller (ETH). The theme was “Management of Integrated End-to-end Communications and Services.” Participation was just under 400.

IM 2007 met in Munich. The General Chairs were Gabi Dreo-Rodosek (University of Federal Army, Munich) and Edgar Aschenbrenner (HP) and the TPC Chairs were Ehab Al-Shaer (DePaul University), Heinz-Gerd Hegering (Leibniz Supercomputing Center), and Alexander Keller (IBM). The theme was “Moving from Bits to Business Value.” Participation was nearly 400. The conference had very strong support from local and global industry patrons.

For its twentieth-year anniversary, *NOMS 2008* will meet in Salvador da Bahia, Brazil. The General Chairs are José Marcos Nogueira (UFMG) and Mehmet Ulema (Manhattan College). The TPC Chairs are Marcus Brunner (NEC) and Carlos Becker Westphall (UFSC). The theme will be, “Pervasive Management for Ubiquitous Networks and Services.”

5 APNOMS—Asian-Pacific NOMS—Timeline [6]

The APNOMS are sponsored by IEICE TM and KICS KNOM, are supported by the IEEE and other organizations [6].

APNOMS 1997 met in Seoul, Korea. The General Chair was Jong-Tae Park and the Vice Chair was Yoshiaki Tanaka. The Program Chair was Il-Soo Ahn. The TPC Chairs were Seong-Beom Kim and Yukio Hashida. The theme was “Toward Global Network Management”.

APNOMS 1998 met in Sendai, Japan. The General Chair was Masayoshi Ejiri and the Vice Chair was Young-Hyun Cho. The TPC Chairs were Yasuhiko Takei and Seong-Beom Kim. The theme was “Managing the New Telecommunications Paradigms”.

APNOMS 1999 met in Kyongju, Korea. The General Chair was Young-Hyun Cho and the Vice Chair was Hiroshi Tokunaga. The TPC Chairs were J. Won-Ki Hong and Takafumi Chujo. The theme was “Meeting the Challenge in End-to-End Service Management”.

APNOMS 2000 met in Nara, Japan. The General Chair was Hiroshi Tokunaga and the Vice Chair was Seong-Beom Kim. The TPC Chairs were Satoshi Hasegawa and Tai Myung Chung. The theme was “New Management Paradigms and Technologies Towards the Internet Millennium”.

APNOMS 2001 met in Sydney, Australia. The General Chairs were Vijay Varadharajan and Yoshimi Techigawara and the Vice Chair was Seong-Beom Kim. The TPC Chairs were Pradeep Ray, Koichi Sano, and Young-Tak Kim. The theme was “Management for e-Business in the New Millennium”.

APNOMS 2002 met in Jeju, Korea. The General Chair was Seong-Beom Kim and the Vice Chair was Koichi Suda. The TPC Chairs were ChoongSeon Hong and

Yoshiaki Kiriha. The theme was “Integrated Management for Telecommunication Solutions—Process, OSS and Technology”.

APNOMS 2003 met in Fukuoka, Japan. The General Chair was Kenichi Mase and the Vice Chair was Il-Soo Ahn. The TPC Chairs were Nobuo Fujii and Young-Chul Shim. The theme was “Managing Pervasive Computing and Ubiquitous Communications”.

APNOMS 2005 met in Okinawa, Japan. The General Chair was Nobuo Fujii and the Vice Chair was James Hong. The TPC Chairs were Hiroshi Uno and Kwang-Hui Lee. The theme was “Toward Managed Ubiquitous Information Society”.

APNOMS 2006 met in Busan, Korea. The General Chair was James Won-Ki Hong and the Vice Chair was Hiroshi Kuriyama. The TPC Chairs were Young-Tak Kim and Makoto Takano. The theme was “Management of Convergence Networks and Services”.

APNOMS 2007 met in Sapporo, Japan. The General Chair was Hiroshi Kuriyama and the Vice Chairs were Kyung-Hyu Lee and G. S. Kuo. The TPC Chairs were Shingo Ata and Choong Seon Hong.

6 LANOMS—Latin America NOMS—Timeline [7]

LANOMS 1999 Latin American NOMS (LANOMS) had its inaugural conference in 1999 in Rio de Janeiro, Brazil. Carlos Westphall served as the General Chair and the TPC Chair. The Vice TPC Chairs were Luiz Fernando Kormann and Mirela Sechi Moretti Annoni Notare.

LANOMS 2001 met in Belo Horizonte, Brazil. The General Chair was Jose Nogueira. The TPC Chair was Antonio Loureiro.

LANOMS 2003 met in Iguassu Falls, Brazil. The General Chair was Elias P. Duarte Jr. The TPC Chair was Edmundo R. M. Madeira.

LANOMS 2005 met in Porto Alegre, Brazil. The General Chairs were Lisandro Z. Granville and Luciano P. Gaspar. The TPC Chairs were Bruno Schulze and José Neuman de Souza.

LANOMS 2007 will meet in Petrópolis, Brazil. The General Chairs were José Neuman de Souza and Bruno Schulze. The TPC Chairs were Jacques Sauv e and Edmundo Madeira.

7 Summary

The integrated management community in 2007 benefits from at least five symposia series: NOMS, IM, APNOMS, LANOMS, and MANWEEK. These are complementary events that bring together hundreds of professionals who collaborate within our community of practice. The field has grown from a gleam in the eye of a few to multiple technical activities. It should also be noted that the TPCs for IM and NOMS now meet during Management Week [5], which takes place during the Fall, and consists of five workshops in the integrated management area: DSOM, Management of Multimedia and Mobile Services (MMNS), IP Operations and

Management (IPOM), Modeling Autonomic Computing Environments (MACE), End-to-end Virtualization and Grid Management (EVGM).

Acknowledgements I would like to thank Paul Brusil and Doug Zuckerman for their advice and contributions [8]. I would also like to thank the leadership of the integrated management community, for the continual support and consistent pursuit of excellence, in order to enhance the value to our community.

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