

# The World is Flat: Globalization of Materials R&D

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## Implications for Materials Societies

2005 TMS Annual Meeting & Exhibition  
San Francisco, CA  
February 14, 2005

Brajendra Mishra, VP-Elect, TMS  
Warren Hunt, Technical Director, TMS

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# Professional societies bring the world to you

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- **Globalization of Materials R&D**

Promotes awareness

Reduces redundancy

Improves efficiency (time, cost, etc.)

Encourages appreciation

Allows networking

Provides opportunities



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**Resource Leveraging**

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# Materials Societies

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**Materials Research Society**  
The Materials Gateway



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# Materials Societies

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- AWS
- NACE
- ECS
- AVS
- ASTM
- APS
- ACS
- AACG
- SPE
- SME



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# HOW MATERIALS SOCIETIES WORK?

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Volunteers & staff

Society Structure

Strategic Planning

External Liasoning

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# **MATERIALS SOCIETIES:** *Activities*

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**Membership**

**Programming**

**Publication**

**Outreach**

**Professional Development**

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# COLLABORATIONS

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MATERIALS SOCIETIES COUNCIL:  
NMAB

FMS

The International Organization of  
Materials, Metals and Minerals  
Societies [IOMMMS]

IUMRS

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# **COLLABORATION GOALS**

## **NMAB**

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**Creation of a unified voice**

**Framework for  
overarching issues**

**Framework for  
international  
collaborations**

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**I**nternational **U**nion of **M**aterials **R**esearch **S**ocieties

*International Virtual Institute*



<http://www.materialsworld.net>

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## GOALS

Promote research collaborations

Facilitate technology exchange

Engage in global materials S&T  
education initiatives

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## ❖ Materials World Network (MWNNet)

- ❖ Global Topical Networks
- ❖ Nanotechnology Network (GNN)
- ❖ Energy & Environment

## International Virtual Institute (IVI)

- ❖ Develop Cyber Infrastructure to support MWNNet: Northwestern University
- Working Links: Europe, India, Japan, Korea, US
- ❖ Meetings, Workshops, Training

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## The MWNet has three main strands:

- ❖ Materials researchers & educators
- ❖ Government funding agencies (e.g. NSF and its international counterparts)
- Implementation of joint programs in Europe, Americas, and Asia
  - ❖ IT & database experts

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# EUROPIAN FEDERATION

*Science & Engineering is a global enterprise*

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**21 COUNTRIES**

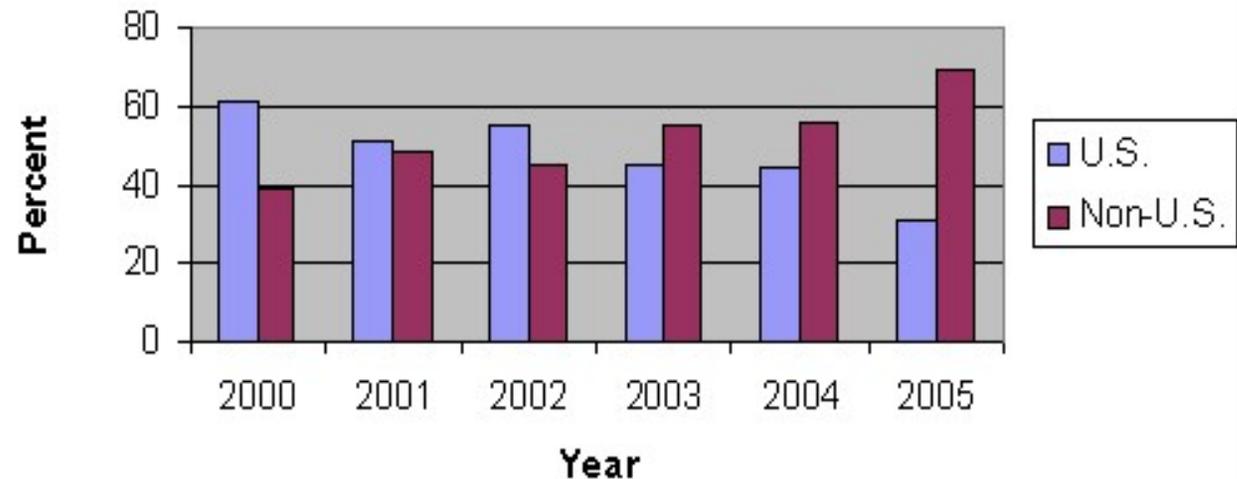
**27 SOCIETIES**

**TIMS**

# PUBLICATION TRENDS

## *Materials Science Journals*

**Journal of Electronic Materials 5 Year Trend of U.S. vs. non-U.S. Papers Published (by percentage)**

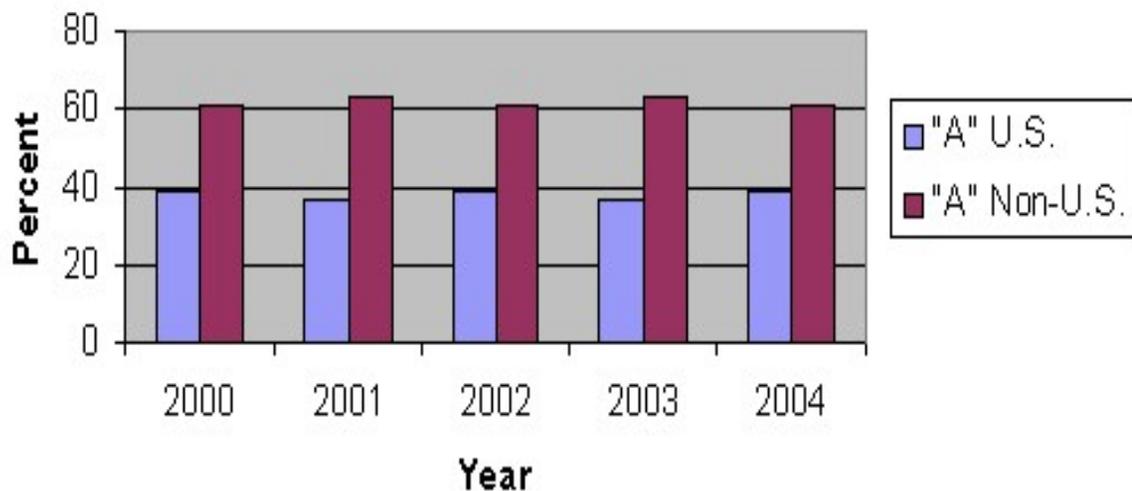


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# PUBLICATION TRENDS

## *Materials Science Journals*

**Metallurgical and Materials Transactions A  
5 Year Trend of U.S. vs. non-U.S. Papers  
Published (by percentage)**

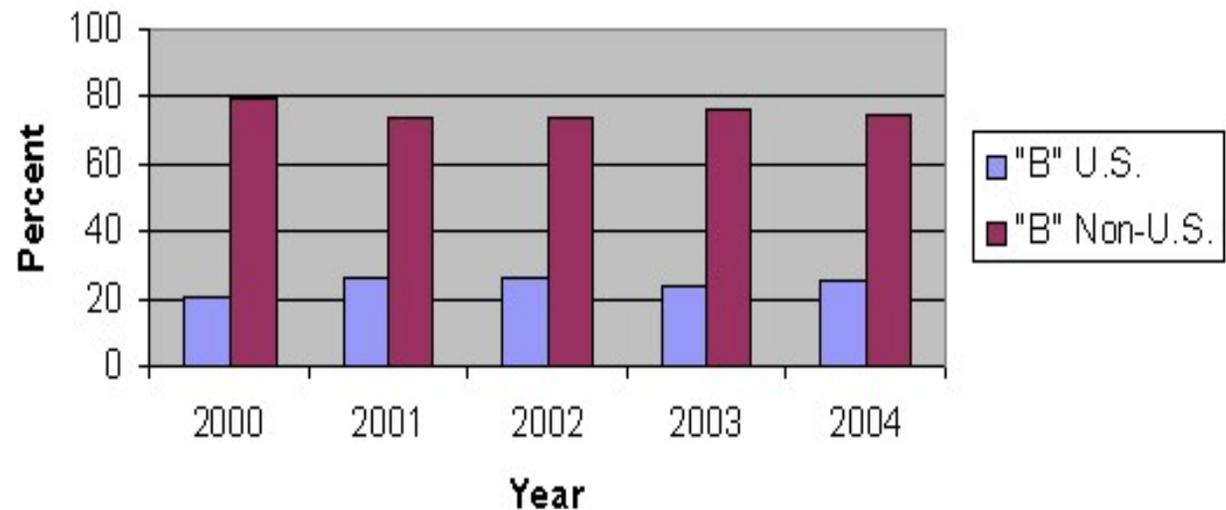


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# PUBLICATION TRENDS

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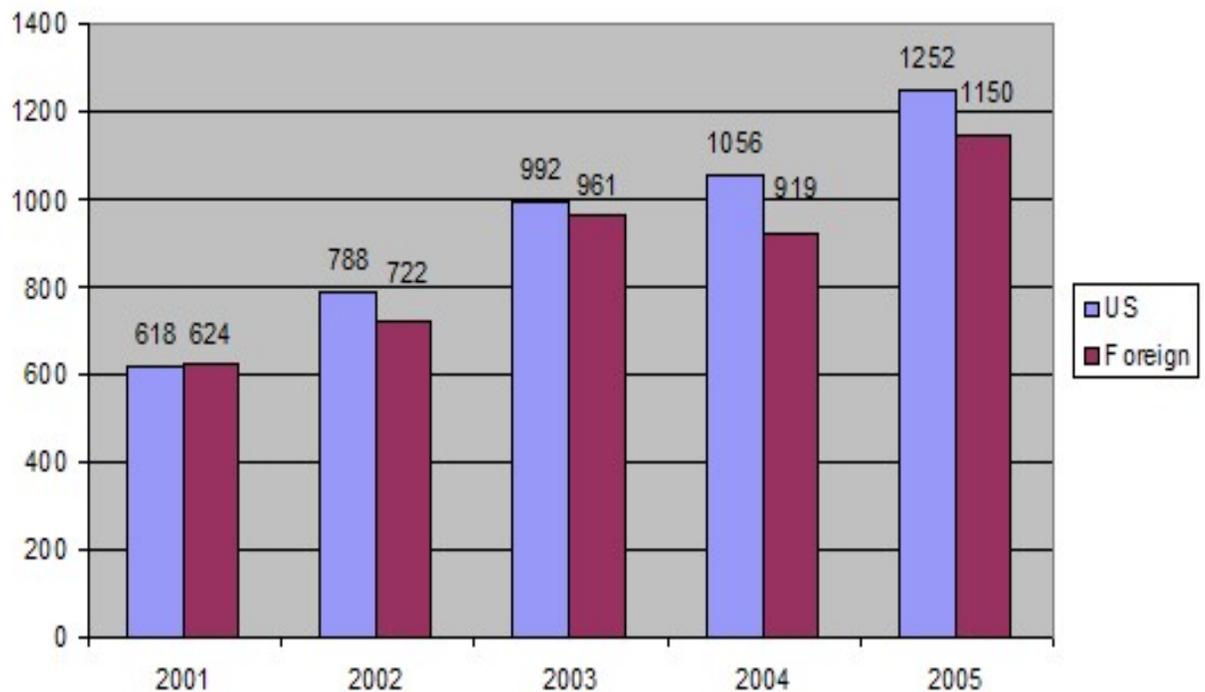


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# PUBLICATION TRENDS

## *Materials Science Journals*

TMS Annual Meetings 2001-2005  
U.S. versus non-U.S. Abstract Submissions



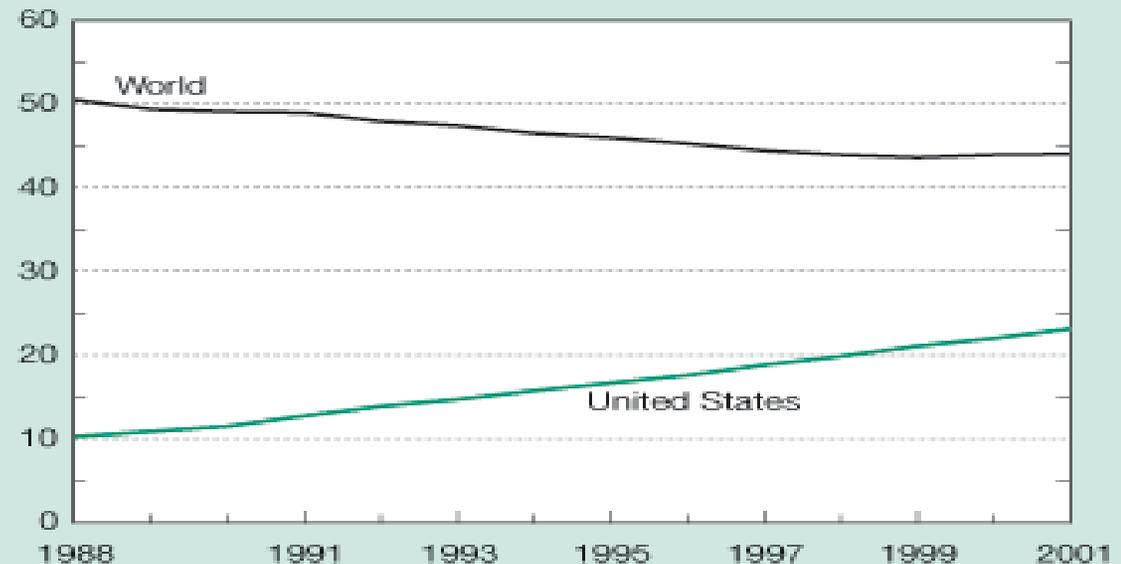
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# PUBLICATION: TRENDS

<http://www.nsf.gov/sbe/srs/seind04/c0/c0s1.htm>

Figure O-10  
World's internationally coauthored articles with one or more U.S. authors and U.S. articles with one or more foreign-based authors: 1988–2001

Percent



SOURCES: Institute for Scientific Information, Science Citation Index and Social Sciences Citation Index; CHI Research, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

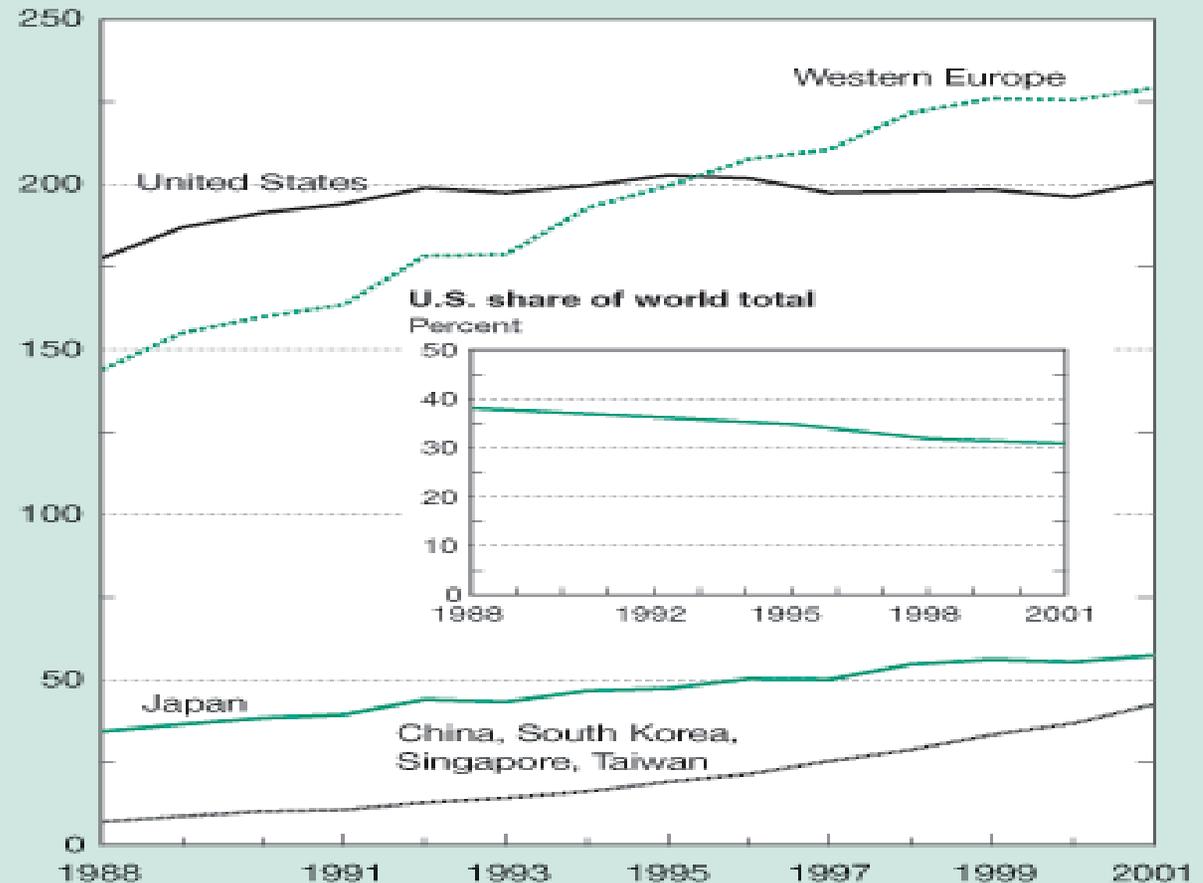
*Science & Engineering Indicators – 2004*

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# PUBLICATION: TRENDS

Figure O-8  
**S&E articles, by selected country/region and U.S. share of world total: 1988–2001**

Thousands



SOURCES: Institute for Scientific Information, Science Citation Index and Social Sciences Citation Index; CHI Research, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations. See appendix table 5-35.

Science & Engineering Indicators – 2004

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# MEMBERSHIP TRENDS

*Annual Meeting Attendance*

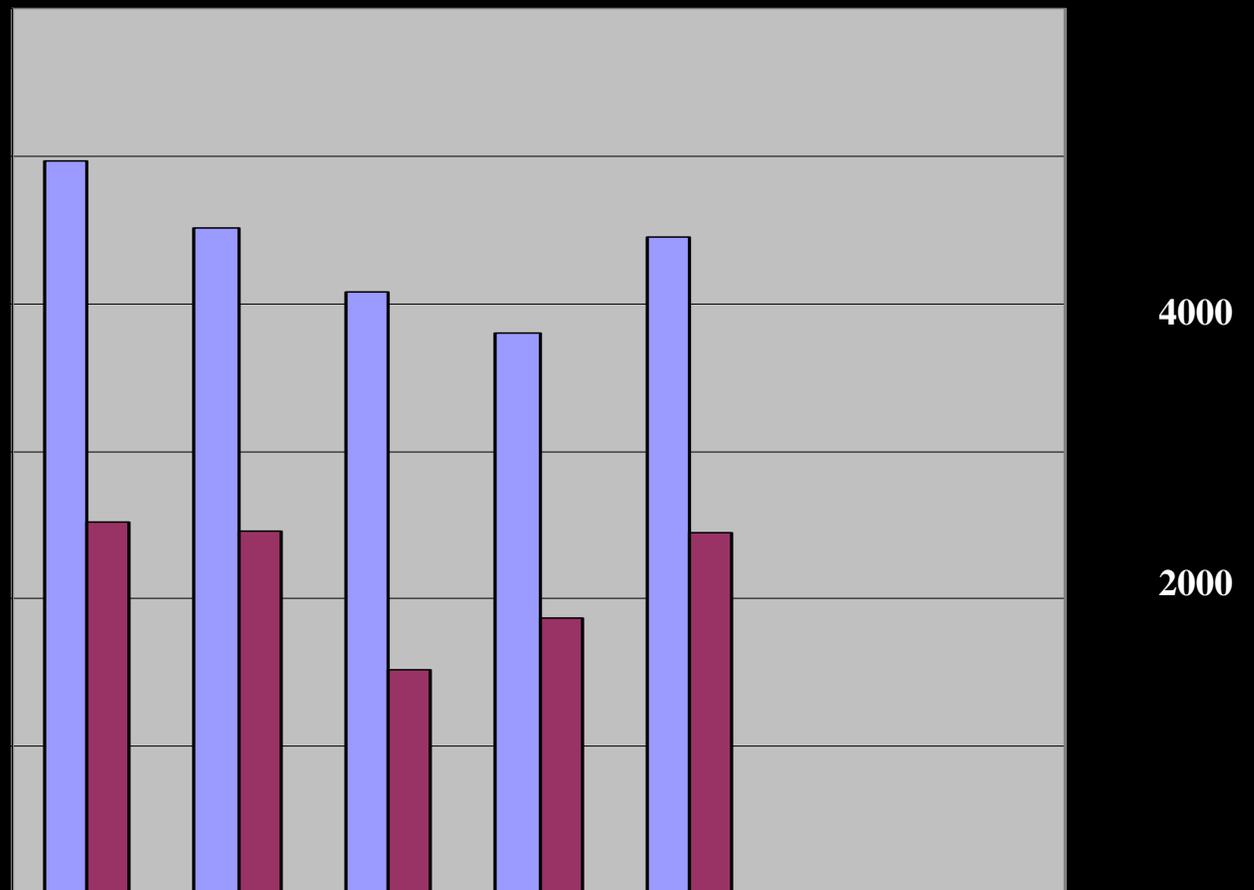


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# MEMBERSHIP TRENDS

*TMS*

2000-2004



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# MEMBERSHIP TRENDS

*MRS*

## 2000-2004

YEAR	TOTAL PAID ATTENDANCE	% INTERNATIONAL
<b>Spring Meeting - San Francisco</b>		
S2000	2884	29.58%
S2001	2905	36.80%
S2002	2439	30.74%
S2003	2544	30.58%
S2004	2653	33.54%
<b>Fall Meeting - Boston</b>		
F2000	4445	38.19%
F2001*	3748	28.33%
F2002	4462	33.57%
F2003	4738	33.46%
F2004	4857	31.89%

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# MEMBERSHIP TRENDS

*Partnership vs. Marketing opportunity*

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e-Membership: CSM, IIM, IOM<sup>3</sup>

Information **exchange**

Liaison

Visits

**Participation** in administration

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# PROGRAMMING TRENDS

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**PRICM**

**REWAS**

**PMP**

**Thermec**

**Membership on IOCs**

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# STRATEGIC PLANNING

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**Goal I:**

**Broaden the engagement  
of the global materials  
community**

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# STRATEGIES

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**Engage areas of the world that are contributing or need access to materials information/services**

**Identify and initiate opportunities/mechanisms to increase global scientific and electronic services**

**Develop value-added strategic alliances**

**Develop joint meetings and specialty conferences**

**Assess the need for a global entity of societies**

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# CONCLUSION

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**MATERIALS SOCIETIES  
MUST THINK AND ACT  
GLOBALLY TO BE  
EFFECTIVE**

**INTERACTION AND  
PARTNERSHIP IN EVERY  
ACTIVITY OF THE SOCIETY**

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