About this Document

This document contains two sections: 1) the 2016-2017 Strategic Plan and 2) the Operating Plan. Consequently, the Society’s Strategy is linked to the sources of revenue, resources required, and committed timelines to “operationalize” the Strategic Plan for ASM International.

**Strategic Plan:** In June 2016, 50 members of ASM were called together to help chart ASM’s strategic path forward. They included the ASM Trustees, Affiliate Leadership, Key Staff Members, ASM Past Presidents, Manufacturing Innovation Institute Executives, and invited guests. This document contains the key results of that meeting, which defined the overall direction of ASM International for the next several years.

**Operating Plan:** As of September, 2016, the Board of Trustees engaged a new Managing Director: Mr. Bill Mahoney. With a new Management Team in place, a bottoms-up assessment was conducted in order to define the methods and timeframes required to implement ASM’s Strategic Plan. The results of that assessment are also included in this document, in the form of key excerpts from the ASM International 2017 Annual Operating Plan, with views of 2018 and 2019.
### Strategic Planning Summary of BHAGs, Objectives, and Action Plans – 2016-2017

<table>
<thead>
<tr>
<th>BHAG (Big Hairy Audacious Goal)</th>
<th>Membership</th>
<th>Technical Excellence</th>
<th>Strategic Collaborations and Partnerships</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASM membership is the obvious choice for anyone interested in materials.</td>
<td>ASM will be the recognized world leader for materials information!</td>
<td>ASM will expand its strategic partnerships and collaborations in order to provide enhance value.</td>
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<thead>
<tr>
<th>Objectives</th>
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<tr>
<td>• Enhance Full-Paid and Student Membership</td>
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<tr>
<td>• Enhance membership diversity</td>
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<td>• Enhance member engagement</td>
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<td>• Increase the speed and volume of content creation and its dissemination.</td>
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<td>• Establish ASM as the “thought leader” in emerging engineered materials</td>
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<td>• Enhance content accessibility</td>
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<tr>
<td>• Facilitate member-to-member technical interactions</td>
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<tr>
<td>• Increase partnerships with manufacturing institutes</td>
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<tr>
<td>• Increase partnerships with other materials data providers</td>
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<tr>
<td>• Increase education courses offered with partner Societies</td>
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<table>
<thead>
<tr>
<th>Action Plans</th>
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<tbody>
<tr>
<td>We will:</td>
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<tr>
<td>1. Provide enhanced resources of value to students transitioning into the work place and existing working professionals</td>
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<tr>
<td>2. Unlock the value of ASM Content and redesign the website for usability and access.</td>
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<td>3. Expand and strengthen the technical content offered by ASM.</td>
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<tr>
<td>4. Create a tailored membership model to encourage non-material professional participation.</td>
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<tr>
<td>5. Improve ASM brand identity and awareness</td>
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<tr>
<td>We will:</td>
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<tr>
<td>1. Develop a new, sustainable business model for technical product creation and delivery.</td>
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<tr>
<td>2. Implement streamlined content management and delivery infrastructure and processes.</td>
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<td>3. Establish a (Wiki-like) member driven content creation and review process.</td>
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<tr>
<td>4. Publish authoritative technical reports (bi-annually) on emerging technologies.</td>
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<td>5. Implement tools that members use to connect, collaborate and share real world advice with peers.</td>
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<tr>
<td>We will:</td>
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<tr>
<td>1. Engage with the national network of manufacturing institutes in order to provide value added content.</td>
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<tr>
<td>2. Assess the needs of our potential strategic partners in order to build win-win relationships.</td>
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<tr>
<td>3. Partner with key sources of materials data.</td>
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<tr>
<td>4. Evaluate business models for providing open source materials data.</td>
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</table>
A. Enhance Membership


A1. Improve outreach and access to students

A2. Digitize all ASM content and re-design website for visibility and access

A3. Strengthen content and profile of non-metal information and Affiliate Societies

A4. Create tiered membership models

A5. Improve ASM brand identity and awareness

A6. Increase articulation and recognition of benefits of ASM membership
B. Exemplify Technical Excellence


B1. Increase resources and capabilities to support technical content

B2. Create new business model for technical content access and delivery

B3. Change content creation culture to increase contribution and speed

B4. Establish effective user interface for obtaining information

B5. Author bi-annual reports on emerging technologies, with close coordination with Affiliate Societies
C. Establish Strategic Collaborations and Partnerships


C1. Conduct a partner needs assessment to inform partnership decision

C2. Partner with key materials data sources

C3. Partner with manufacturing institutes and other remanufacturing organization

C4. Develop strategy for providing best “Open Source” materials gateway and business model
Most Critical Challenges – June 2016

A. Enhance Membership

- Clarifying identity and brand awareness
  - (e.g., Does ASM sell books?)
- Deploying user-friendly website for delivering products & services to members
- Improving ability to access students via:
  - “Material Advantage” student program
  - Collaborative activities with other societies
- Increasing view/transparency of ASM and the benefits they offer as a professional organization
- Expanding into non-metal focus areas
  - Make both a reality and the perception of others
Most Critical Challenges – June 2016

• Overarching Challenge: Building resource $, people, capabilities and expertise
• Making Content more accessible
  o Need a business model aligned with priorities and metrics.
  o The volume and types of data are large
  o Improved understanding of the competitive market
  o Improved infrastructure to access data
• Content Creation: Permission/ability to change culture
• “Ask the Expert”: Delivery of a “Youth Friendly” communication interface to materials information
• Thought Leadership: Improving coordination of resources that deal with emerging technologies, e.g. ASM and affiliates

B. Exemplify Technical Excellence
C. Establish Strategic Collaborations and Partnerships

Most Critical Challenges – June 2016

• How to motivate/enable choosing ASM over Google as a primary material database gateway
• Motivating a technical society to collaborate with us
• How to tailor win/win situations with joint educational courses
• Establishing the value proposition for partnering with other data providers
• Determining manufacturing initiatives which would be the best targets for partnering with manufacturing institutes
• Motivating researchers/students to publish at ASM vs. other societies
Strategic Summary: Re-Establish ASM as Central Player in Critical Segments

- **Technical Excellence** “in all we do”
  - Technical products, data, & information
  - Services
  - Business
  - Operations
- **Membership** “increase”
  - Individual full paying member
  - Student member conversions
- **Collaboration/Partnerships** “strategic”
  - Professional societies
  - Government
  - NMIIs
  - Corporations & Academia
# Appendix A: Participants June 2016 Strategic Planning

## Guest Participants
- Michael Andreason - SVC
- Brench Boden, Digital Manufacturing and Design Innovation Institute (DMDII)
- Ross Brindle, Nexight Group LLC
- Lawrence Brown, LIFT
- Dianne Chong, FASM, Boeing- ASM Past President
- Jared Kosters, Nexight Group LLC
- Ed Morris, America Makes
- Mark Smith FASM, Sandia National Labs—ASM Past President
- Gary Vergason, Vergason Technology Inc—SVC

## Affiliate Societies
- Burak Akyuz, Applied Technical Services, Inc – FAS
- Richard Blackwell, FASM, Precision Surfaces International – International Metallographic Society
- Jaret Frafjord, IMR Test Labs – IMS
- James Lane, Professional Analysis and Consulting Inc. – FAS
- Christian Moreau FASM, Concordia University – TSS
- Jim Oakes, Super Systems Inc. – Heat Treating Society
- Jeremy Schaffer, Fort Wayne Metals, SMST
- Aaron Stebner, Colorado School of Mines - SMST
- Zhiyong Wang, Maxim Integrated – EDFAS

## Board of Trustees
- Swetha Barkam, Univ Of Central Florida
- Aaron Birt, Worcester Polytechnic Institute
- Ellen Cerreta, Los Alamos National Laboratory
- Craig Clauser, Craig Clauser Engineering Consulting
- Sunniva Collins FASM, Case Western Reserve University
- Kathryn Dannemann, Rensselaer Polytechnic Institute
- Ryan Deacon, United Technologies Research Center
- Joseph DeGenova, Ellwood Group Inc.
- Jacqueline Earle, Caterpillar
- Allison Fraser, Lehigh University
- William Frazier FASM, Naval Air Systems Command
- Larry Hanke FASM, Materials Evaluation And Engineering Inc
- Roger Jones, Solar Atmospheres Incorporated
- John Keough FASM, Applied Process Incorporated
- Zi-Kui Liu FASM, Penn State University
- Frederick Schmidt FASM, Advanced Applied Services
- Rachel Stewart, Colorado School of Mines
- Sarah Straub, ExxonMobil Chemical T. Sudarshan FASM, Materials Modification Incorporated
- Jon Tirpak FASM, Advanced Technology International (ATI)
- John Wolodko, University of Alberta

## ASM Staff
- Ronald Aderhold
- Veronica Becker
- Larry Berardinis
- Nichol Campana
- John Cerne
- Thomas Dudley
- Scott Henry
- Sarina Pastoric
- Leslie Taylor
- Kelly Thomas
- Tom Trice
2017 Annual Operating Plan
Executive Summary

• An intensive period of remediation, re-construction, and gradual but continuous improvement began for ASM in 2016. New corporate – experienced Management Team members joined ASM, and commenced the process of reinvigorating ASM as the World’s Leading Association serving the Materials Industry. That transformational process carries the title “The ASM Renewal.”

• The ASM Renewal will require a span of approximately 3 years to accomplish. The first 18-24 months of that period will be focused upon improving the merchantability and market access of ASM’s current Materials Information products and services, while the first 2 phases of a Digital Transformation/Content Enrichment program are executed.

• The second portion that period should see ASM perfecting (through a 3rd phase) the utilization of its new digital platform and predominantly electronic publishing model.

• To deliver new products and services, along with new primarily digital forms of its traditional products and services, cleanup of prior crises conditions will occur in 2017, and initial stabilization will be achieved. 2018 will see an extension of stability, and modest growth. 2019 should begin to see consistent growth, but no breakthroughs or dramatic upticks. Accelerating growth will become realistic in 2020 and beyond.
Executive Summary (cont’d)

• Financial improvements through the ASM Renewal will be gradual. FY17 will see an improved bottom line vs. FY16, but still a loss of Net Revenue (directs plus indirects recorded), as investments in remediation and Digital Transformation are required, and the sales pipeline entering FY17 is weak due to prior inattention.

• FY18 should range between slight Net Revenues loss (about 6%) to possibly a breakeven, if sales ramp faster than expected. FY19 should see a slight profit. There is unlikely to be a dramatic “hockey stick” ramp-up effect on revenue after completion of the Digital Transformation/Content-Enrichment Program, and no such effect is forecast here. Benchmarking vs. IEEE, ASTM, and SAE reveal characteristic revenue vs. expense effects from these types of projects to be slight incremental growth in revenue, but significant reductions in expense.

• Nevertheless, by the end of FY19, with the completion of the Renewal, ASM should also be positioned as both: 1) The best option for professional development for materials scientists, engineers, and technicians; and 2) The most comprehensive and competitive Materials Technology Information Services available.
# ASM Renewal Timeline: Operationalizing the Strategic Plan

## Strategic Initiatives:

### June 2016 Report

<table>
<thead>
<tr>
<th>Strategic Initiatives</th>
<th>Operating Initiatives: Start and Ongoing Timelines</th>
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<tbody>
<tr>
<td></td>
<td>2017</td>
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<td>Q1</td>
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<tr>
<td><strong>A. Enhance Membership</strong></td>
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<tr>
<td>A1. Improve Student Outreach</td>
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<tr>
<td>A2. Digitize ASM Content/Re-Design Website</td>
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<td>A3. Strengthen Non-Metal Content</td>
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<tr>
<td><strong>B. Exemplify Technical Excellence</strong></td>
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<tr>
<td>B1. Increase Technical Content Capabilities</td>
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<tr>
<td>B3. Change Content Creation Culture</td>
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<tr>
<td>B5. Monitor &amp; Report on Emerging Technologies Important to Affiliates</td>
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<tr>
<td><strong>C. Establish Strategic Collaborations &amp; Partnerships</strong></td>
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<tr>
<td>C1. Conduct Partnership Assessment</td>
<td>C1</td>
</tr>
<tr>
<td>C2. Partner w/Key Materials Data Source(s)</td>
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<tr>
<td>C3. Partner w/Mfg., Re-Mfg. institutes</td>
<td>C3</td>
</tr>
<tr>
<td>C4. Sus Model &amp; Strategy for Best Open Source Materials Data Gateway</td>
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Key Operating Programs for 2017

Membership and Revenue Growth

1. Direct – Sell Corporate Packages
   - Target new-name companies in adjacent equipment and services segments
   - Bundle memberships with products and services

2. Position Membership as “Key to the ASM Kingdom”
   - Eliminate Free Memberships/Automems

3. Scale Education
   - Re-package best-selling curriculum offerings (e.g. Met for Non-Mets 101 and 202) to broaden market targets
   - Leverage CEU’s = CPD’s/PDH’s
   - Make delivery of top-selling ASM courses location-independent (via Digitizing and Chapter Distribution)

Overall: Do a much better job of selling what we have – Overcome lack of prospecting/weak pipeline in 2016
Key Operating Programs for 2017

Improved Bottom Line

1. Establish Contract Management and Controls
   - Deploy cloud-based repository
   - Enforce Signature Authorities
   - Monitor Performance and Adherence to Terms

   - e.g. Travel – Released in 2016
   - Financial and Affiliate Reporting
     - Revenue Recognition
     - Proper Treatment of Indirect Contributions
     - Focus on Net Revenue vs. Direct Contribution
     - Eliminate Practices which masked true cost of operations, i.e. Development Fund, WIP

3. Deliver Operational Back-Office
   - Deploy fully-functioning, integrated financial management systems capable of supporting possible new Affiliates by 2018
Key Operating Programs for 2017

New Technological Competencies

1. Upgrade Website to commercial-grade platform
   • Improved, integrated transaction capability, not “prettier”
   • Mobile-and Tablet-Capable Interface

2. Migrate on-site IT infrastructure to Cloud
   • Improve Reliability/Lower Operation Cost and Risk

3. Select and Implement CRM/Association Management System Replacement
   1. IMIS (current version) is irretrievably broken

4. Advance Digital Transformation/Content Enrichment Phase 1
   1. Complete Benchmarking, Discovery, Design
   2. Devise “Digital-First,” “Compose-Once, Publish Everywhere” Process Model
   3. Deploy Rapid Content Teams
Key Operating Programs for 2017

Support for the ASM Foundation - Recommended

1. Deploy and Operate STEM Premier
   • More efficiently:
     - Market Materials Camps (Fee and Credentials)
     - Fund and select Scholarship Candidates
     - Track and Report Longitudinal Outcomes

2. Focus on Camps and Transition to Break-Even Operation
   • Commence National, State-by-State Student & Teacher Accreditation
   • e.g. Next Generation Science Standards of the National Science Teachers Assn (accomplished December 2016)

3. Hand back select Business Units to ASM Operating Company
   e.g. Workforce Development as Target Program to Scale Education

4. Free up Staff Resources for more traditional fundraising
Summary

• ASM has set aggressive but achievable strategic goals and objective based upon
  ➢ Enhancing membership
  ➢ Improving technical excellence
  ➢ Establishing strategic collaborations/partnerships

• ASM will focus at the intersection of Design/Engineering, Manufacturing, and Materials in order to provide maximum membership value

• The necessary leadership and resources are in place to tackle the hard work ahead

• Membership engagement at all levels is required to ensure success.

Join the ASM Renewal
THANK YOU FOR YOUR SUPPORT OF THE ASM RENEWAL