

ASM International  
2020 Annual Operating Plan  
(With Views of 2021 and 2022)  
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## 2020-2022 Annual Operating Plans

The ASM Annual Operating Plans (AOP) define the time-phased, resource-based, bottoms-up approach to implementing the current Strategic Plan.

### Perspective: The ASM Renewal 2017-2019

An intensive period of remediation, re-construction, and gradual but continuous improvement began for ASM in the fall of 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 transformation process carried the title "The ASM Renewal."

As described in the 2017 Operating Plan, the ASM Renewal forecast a span of approximately 3 years to accomplish the transformation.

During 2017-2019, our membership grew by over 2,000 full-paid professional members, with over 70% of those new members being under 40 years of age. Our full-year revenues have grown by just under 8% annually, and our financial health has significantly improved. Our Digital Transformation successfully deployed 6 major enterprise eCommerce systems and interfaces plus a Digital Library on budget and at or ahead of schedule, without major disruptions in Operations services. We are now able to digitally deliver about 40% of all ASM legacy content with the balance coming in 2020. We have renewed collaborations with ASTM, NACE, the Intelligent Manufacturing System, MRS, and SAE, all of which have resulted in improved interdisciplinary and international market positioning and incremental revenue for ASM. We have a number of additional such collaborations in process as we enter 2020.

### Going Forward: The ASM Realization 2020-2022

Operations has offered the title of "The ASM Realization" to the next three years of ASM's development. The intended context is that this phase should see ASM begin to realize higher growth rates, returns on the Renewal investments, and positive market impacts from deploying additional new products and services.

The overall strategy and operational framework for the ASM Realization is summarized in the table below:

### ASM Strategic and Operational Framework 2020-2022 "The ASM Realization"

2019 Strategic Plan Initiatives	•Maintain/Grow Digital-First Capability •Become More Interdisciplinary/More Diverse/More Global as Quickly as Possible
Operating Action Plans	<ul style="list-style-type: none"><li>Responsibly apply and deploy the portfolio (primarily returns) to advance Strategic Initiatives</li><li>Aggregate and deploy the markets' most relevant Materials Information by: 1) Re-engineering the balance of ASM's Legacy Content, populating the ASM Digital Library, 2) Entering and growing the independent Data Stores and Services for Materials Informatics Marketplace, 3) Deploying an ASM SaaS Ecosystem which includes and distributes via subscription 3<sup>rd</sup> party content, databases, data sets and software tools, 4) Rendering all the above discoverable, searchable, accessible, and interoperable via the internet.</li><li>Evaluate and propose formation and deployment of an ASM Materials Innovation Venture Enterprise</li><li>Prepare for international/global expansion during the Realization Phase</li></ul>

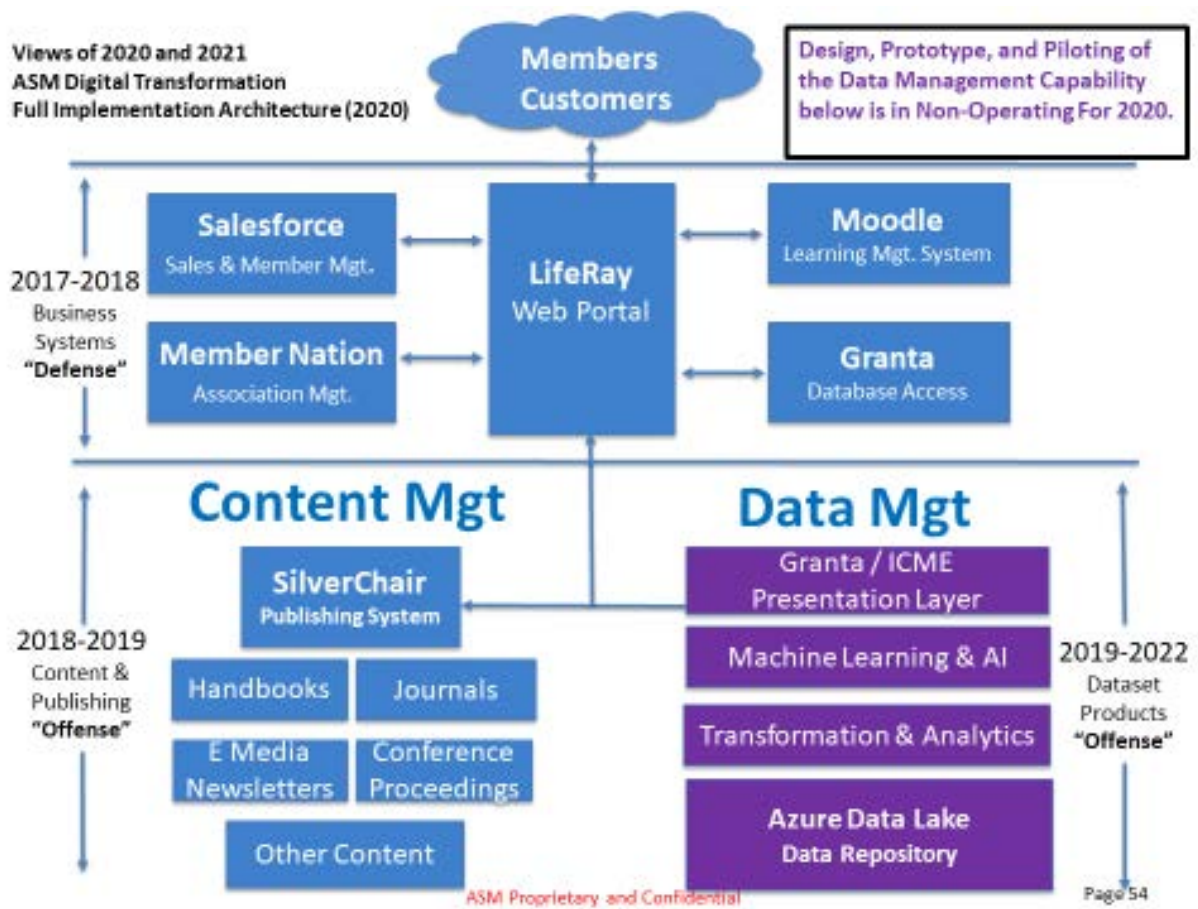
## ASM Strategic and Operational Framework, 2020-2022

### “The ASM Realization” *(continued)*

<b>Operations Key Programs</b>	<ul style="list-style-type: none"> <li>• Source and deploy commercial-grade sales and marketing resources</li> <li>• Develop and deploy a “Chief Technology Office” combining Mat Sci, Data Sci, and IT Know How</li> <li>• Execute Committee Restructuring Initiative</li> <li>• Advance Chapter Tools Rollout and support via Higher Logic (ASM Connect V.2), Bill Highway Software and Training</li> <li>• Execute conference consolidation and growth (SMST + AeroMat2020 – IMAT 2020 w/partners – MRS and SAE in 2021-2022)</li> <li>• Deployment of prototype/pilot of data stores and services architecture and capability (in 2020); ramp operation 2021-2022</li> <li>• Groundwork, monitoring, sourcing training for Diversity, Equity, and Inclusion Initiative and Committees</li> <li>• Establish and operate in-house Legal, Compliance, and Intellectual Property Protection Programs</li> <li>• Completion of Operations infrastructure Modernization</li> </ul>	
<b>Operations Employees</b>	<b>Capability and Incentives</b> <ol style="list-style-type: none"> <li>1. Additional skillsets and capacity</li> <li>2. Cross-Functional Teams Facing the Marketplace</li> <li>3. Incremental Performance-Based Incentive Compensation</li> </ol>	<b>Key Metrics</b> <ol style="list-style-type: none"> <li>1. Improved Financial Health</li> <li>2. Increased Member Engagement</li> <li>3. Deploy New Technological Competencies</li> <li>4. Improved Foundation Support</li> </ol>

The figures below are intended to provide more insight into the most critical Action Plans and Programs described in the 2020 AOP. First and foremost for the Realization is the extension of our current Digital Infrastructure. Tools such as ASM Connect 2.0 (sourced from Higher Logic) and Bill Highway are extending the enterprise on behalf of our chapters and committees. We are also deploying a full scale data management component to our infrastructure, highlighted in purple below:





**Figure 1.**

The Data Management Infrastructure will enable ASM to aggregate, curate, validate, and disseminate the most relevant and valuable Materials Information (both ours and 3<sup>rd</sup> parties) into leading edge, higher growth market segments, such as ICME, Additive Manufacturing, Materials Analytics, and Pervasive Simulation (all of which exhibit current annual growth rates of 22-35%). Architecturally, the Data Management Infrastructure will consist of a partitionable data lake, supporting a services cloud, as illustrated below:

## ASM SaaS Eco-System – ICME Design/Prototype/Pilot – Non-Operating



### ASM Service Cloud

Customers can run their models against our datasets or subscribe to datasets or models directly. Generic results can be fed back to the Data Lake, proprietary results can be safeguarded



### ASM Data Lake

Secure repository of Data and Models Indexed by Material, Topic, Industry or Process



### Data/Metadata

Curated Experimental and Simulated data from many sources

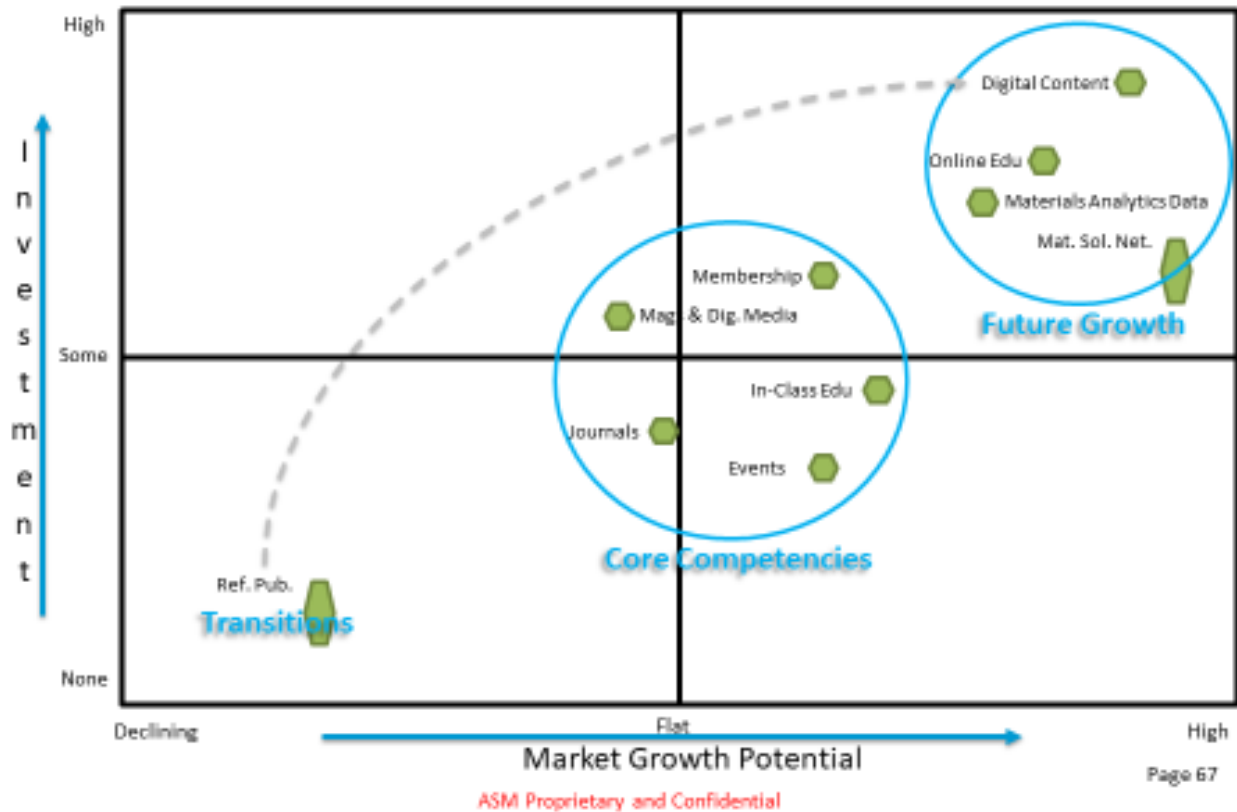
Figure 2.

Third party software tools will reside in the Services Cloud, and interact with validated segments or data sets within the Data Lake. The data and software tool access will be available on a subscription basis, just like the contents of the ASM Digital Library.

While Table 1. Identifies many more Action Plans and Programs inside the ASM Realization, the most important directions within the 2020 Annual Operating Plan, which will render ASM “The Materials Information Society for the 21<sup>st</sup> Century,” are illustrated in the above figures.

The 2020 Annual Operating Plan adopts (but also extends) the key metrics of the Renewal Phase, as follows: Improved financial health; increased member engagement; deployment of new technological competencies; and improved support for the ASM Materials Education Foundation. By executing faithfully the Action Plan and programs described, ASM expects to complete the Realization in the market and member services positioning illustrated below:

## ASM Offering Map: 2020-2022 Executed Transitions



**Figure 3.**

By delivering the Realization Transitions depicted in Figure 3, and this Action Plan and Programs in Table 1, ASM will have re-invented member value by extending our Digital-First, empowered culture. We will also have developed new interdisciplinary and international growth opportunities by integrating new business models through specific offerings. And finally, we will have transitioned overall to a fully modern operating model.

We appreciate your taking the time to read and comprehend this document. The fulfilment of the ASM Strategic Plan Objectives, through executing the ASM Realization and its Annual Operating Plans, is being accomplished. Nonetheless, your membership engagement, at all levels, is required to ensure success.