THE 3D PRINTING ASSOCIATION
Advancing additive manufacturing in Europe

# 3D Printing Stakeholder Survey 2015

3DPA, June 2015

## I. Executive summary

The 3D Printing Association (3DPA) exists to promote, develop, and support every aspect of the 3D printing industry worldwide. With the aim of serving its members as thoroughly and as efficiently as possible, we conducted a voluntary, industry-wide online survey among a pool of over almost two thousand 3D printing market professionals and organisations in order to determine the Association's medium-term goals and strategy. This resulted in a total response of 182 qualified responses.

Survey results reveal that most respondents are not already members of 3DPA but look favourably on the establishment of a member-driven trade association for 3D printing and additive manufacturing, representing all segments of the 3D printing eco system. According to the respondents' breakdown, members are most to likely to be 3D printing services/makers as well as equipment and consumables manufacturers or distributors located in the US and Europe. The preferred geographical scope of such a collective would be global, but with continental chapters. The top 3 priority functions of such an organisation would be PR and public education; connecting stakeholders with each other through networking via an independent platform, and advocacy.

In formalising the 3D printing community under the umbrella of a dedicated association, specific areas of priority are recommended for further exploration during a possible stakeholder meeting to determine the 3D printing association's target audience (B2B, B2C or both?) goals and strategy going forward: industry growth, networking, information exchange, education, public affairs/relations representation, and standardisation.

# II. Background

3DP/AM is an innovative manufacturing process with interests far and wide in the business and consumer arenas. The 3D Printing Association (3DPA) strives to develop and promote a thriving 3D printing industry globally. Its role is to advance the awareness and implementation of 3DP/AM by businesses and consumers in any number of applications and industries around the world.

3DPA is dedicated to providing manufacturers, designers, resellers, and the entire 3D printing community, with a committed resource that actively promotes, develops, and supports all elements of the industry, acting as a robust advocate for the technology. In an effort to carry out this mission, it is critical that we understand the drivers and challenges for the 3D printing industry. Toward this end, we conducted an industry-wide survey to identify the priorities for the Association for the next 3-5 years.

The results of the Survey are intended to help the Association to align its activities and programmes with the needs of our (prospective) members, increase member engagement in these programmes, and enhance 3DPA's role as the ultimate resource for networking, information exchange, sourcing, collaboration, and promotion of common interests.

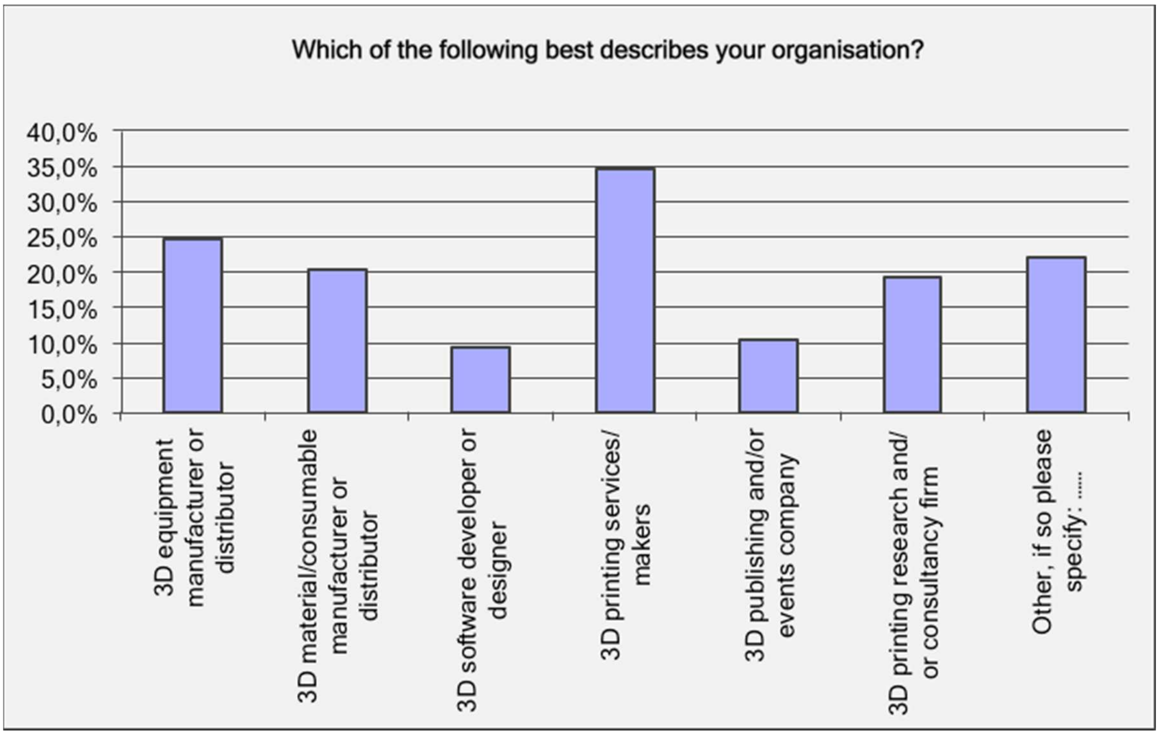
# III. Methodology

For the survey, recipients of the 3DPA e-newsletter were asked to assist 3DPA by providing their views and opinions in a 10-minute online survey via Survey Monkey. Also invited were the members of a sizable LinkedIn group for 3DP/AM technology. The Survey consisted of 20 multiple choice, open-ended, and ranking questions within the categories of demographics, 3D printing market perspectives, and 3D printing association perspectives. A total of 182 respondents participated in the Survey.
The individual results of the Survey have been treated as strictly confidential. Only aggregated results have been analysed and published. Under no circumstances have or will individual replies be shared with third parties.

# IV. Findings

## Survey demographics

**Active players**
The Survey identifies most of the 182 respondents as (1) 3D printing services/makers and (2) 3D equipment manufacturers or distributors. The next largest single group of respondents is 3D material/consumable manufacturers or distributors. The last significant group is "other", which can be broken down into two primary subgroups. The first subgroup is characterised by individuals or businesses, which either utilise or are looking to utilise 3D printing in their activities. The other subgroup consists of educational or academic organisations. The smallest single respondent group is that of the software developers or designers.



**Location**

Most survey participants are located in the US (32%), the UK (25%) and the rest of Europe (34%).

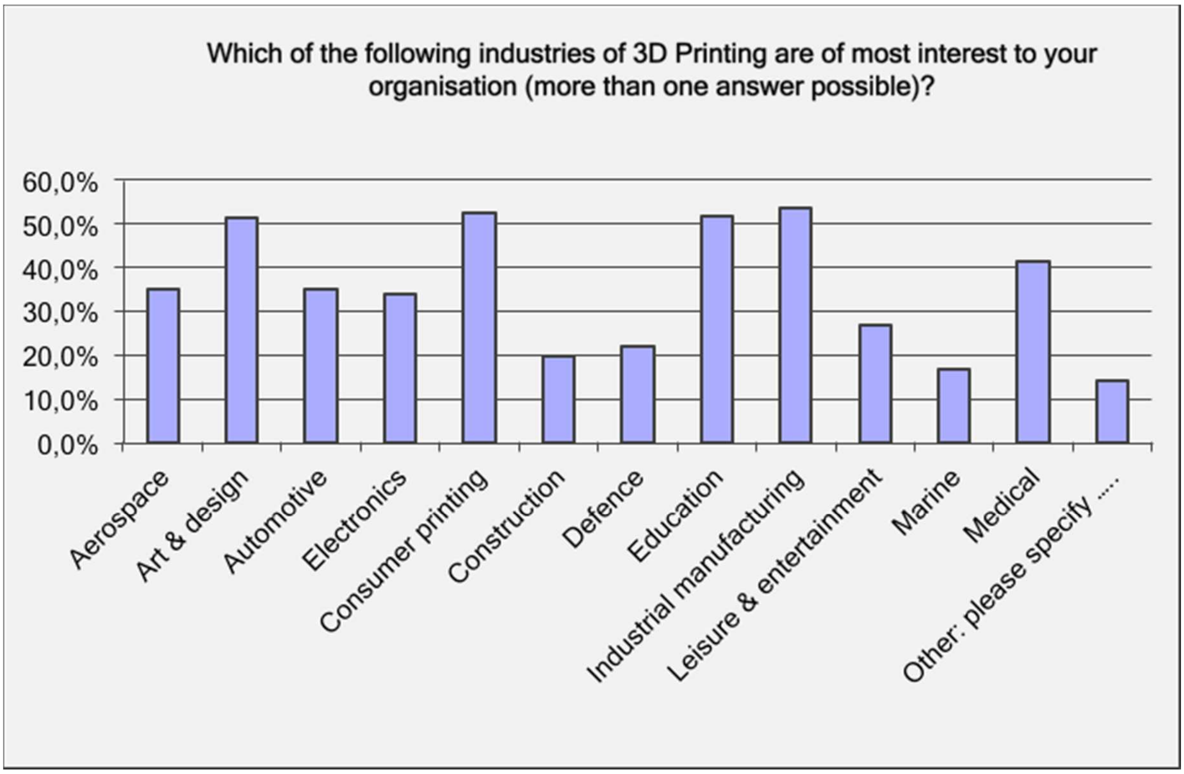
**Positions**

Over half of respondents are the owner, CEO, president, managing partner, and/or chairman of their organisations. Sales and marketing, as well as technical R&D managers, make up the majority of the remainder of respondents. "Other" is the last significant group, consisting of academics, trainers, and other managers, directors, and supervisors.
Almost three quarters of the respondents have been with their organisations for 5 years or less and are evenly distributed between the ages of 25 and 54.
Those active in the 3D printing industry are relatively young and relatively new to their organisations, versus the professionals represented in other trade associations.

## 3D printing market perspectives

**Industries**

Industries of prime interest to survey participants include a wide variety of vertical market segments, of which art & design, consumer printing, education and industrial manufacturing appear to be of greatest interest.




The majority of respondent organisation activities (45%) are characterised as having a global market scope. 37% of respondents indicate that their market focus is B2B, whereas another 51% indicate that they are serving both B2B and B2C market areas. On balance, although the picture is mixed, the stakeholder audience appears to be more focused on B2B.

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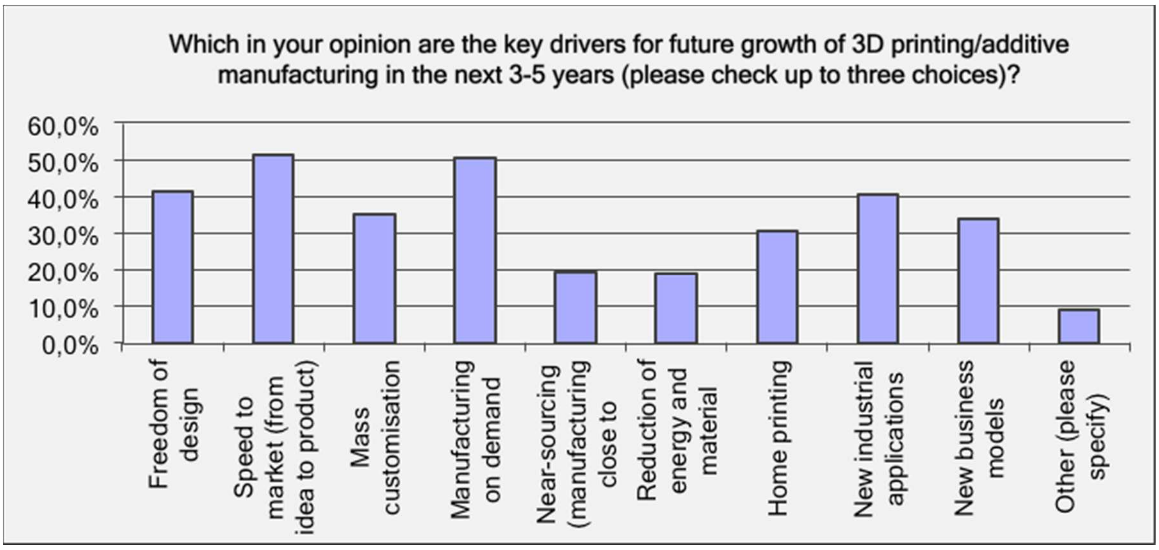
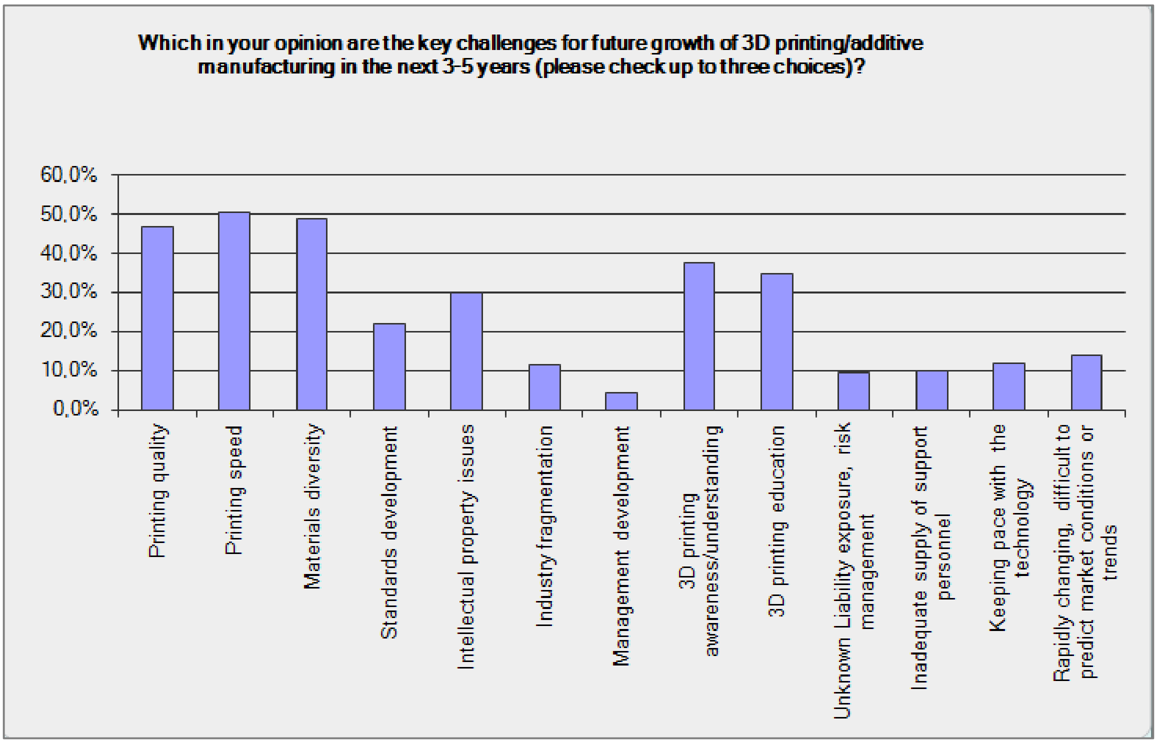
**Growth drivers**

Survey participants feel the key drivers for future growth of 3DP/AM in the next 3-5 years are speed to market (from idea to product, rapid prototyping), manufacturing on demand, freedom of design, and new industrial applications.




**Challenges**

The key challenges for future growth of 3DP/AM in the next 3-5 years are varied, including printing speed and quality, diversity of materials, and awareness of 3D printing technology. Other challenges that receive focus include education of users, intellectual property issues, development of industrial standards, and market instability and uncertainty.

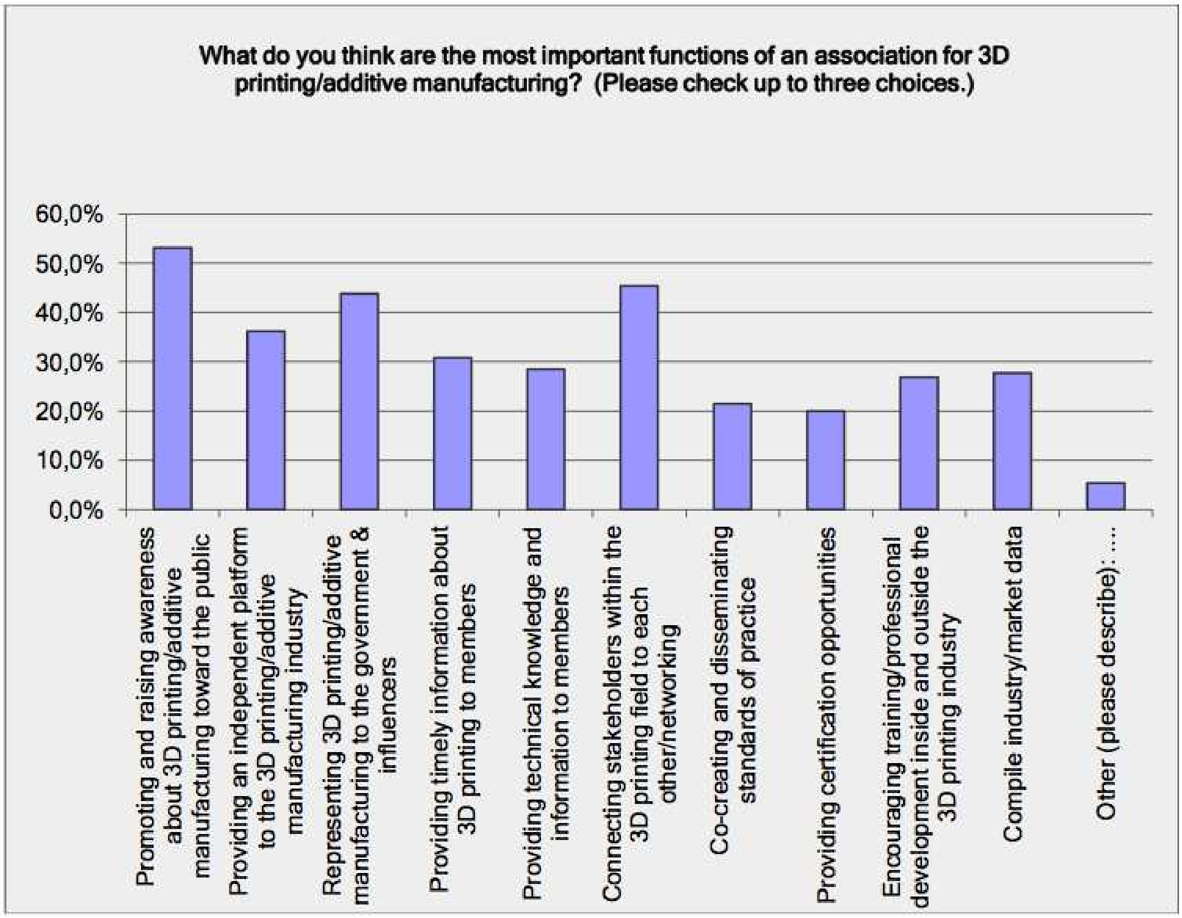


In their own words, respondents describe additional drivers and challenges that have an impact on the 3D printing field today as quality and reliability of 3D printing materials and machines, costs of materials and machines impacting overall profit margins, and sustainability of printing materials.

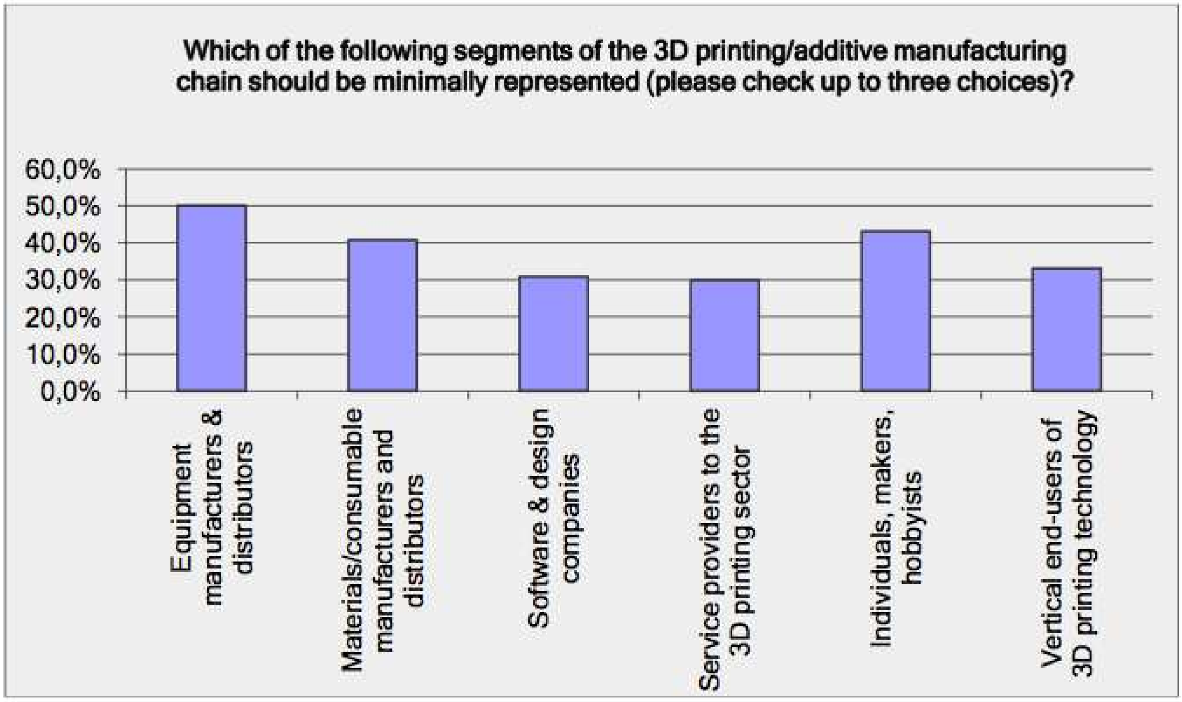
## 3D printing association perspectives

**Member-driven industry collective**
Most respondents are not yet 3DPA members. The clear majority of survey participants, however, indicate that they look “favourably” (30%) or even “very favourably” (33%) on a member-driven trade association with the mission of providing the 3D printing community with a committed resource that actively promotes, develops and supports all elements of the industry.
When asked if they believe the association is capable of addressing practical needs of individual member organisations, the results are slightly less pronounced, although the balance of respondents is still positive.

**Global with continental chapters**
The preferred geographic scope of an association for 3DP/AM is global with continental chapters.
The most important functions of an association for 3DP/AM were identified as promoting and raising awareness about 3DP/AM toward the public, connecting stakeholders within the 3D printing field to each other, and representing 3DP/AM to government entities and influencers.



Survey participants think that all segments of the 3DP/AM industry should be represented: equipment manufacturers and distributors; individuals, makers, hobbyists; and materials/consumable manufacturers and distributors.




In considering active membership in 3DPA, respondents primarily want opportunities to network with peers in their field, gain access to first-hand information, and a reference directory of members/practitioners. Engagement in dedicated community dialogue; access to products, services and suppliers; and participation in creating and influencing standards of practice, were identified as secondary drivers for association membership.

Lastly, survey participants pointed at the open, collaborative environment in which the 3D community operates. Whereas a dedicated member driven trade association can help achieving the 3D community's common objectives, its business model should take into account the specific circumstances and dynamics of the 3D printing ecosystem.

## Going forward

Approximately 90% of respondents concluded the Survey by indicating their interest in being informed on the outcome of the Survey and future plans of 3DPA. About half would like to be invited to a possible leadership summit, and about a fourth would be interested in participating in a follow-up telephone interview regarding organising the 3D printing industry.

# V. Survey conclusions

The survey population demographics indicate that 3DPA's stakeholder audience consists of business leaders and owners, marketing and sales executives as well as technical and R&D people, of which nearly 60% are below the age of 45. According to the survey, nearly 75% of the 3D printing community have been with their current organisation for 5 years or less.

3D printing services providers and 'makers' make up the largest proportion of the stakeholder audience, with manufacturers and distributors of equipment and consumables as the second and third largest single target group. Developers and designers of software are the smallest single target group responding to the survey.

The majority of the respondent group are not yet a member of the 3D Printing Association. Whereas the majority of the stakeholder audience (45%) indicate that their focus is global, according to the survey, the majority of the stakeholder audience (nearly 60%) is located in Europe and the US. 40% of the stakeholders responding indicate that the preferred scope of the association should be global, but with continental chapters.

Various aspects of 3D printing/AM development are seen as clear drivers for industry growth in the near future, with speed to market (prototyping) and manufacturing on demand as most prominent opportunities, followed by freedom of design and new industrial applications.

On the other hand, respondents are concerned about speed and quality of printing as well as the diversity of materials as most important challenges, followed by education about/awareness of 3D printing technology, and intellectual property issues.

The survey indicates that almost two thirds of the stakeholder audience responding to the survey looks favourable or even very favourable toward a member-driven trade association for 3D printing/additive manufacturing.

Asked where a trade association can support the strategic interests of the 3D printing community, respondents believe that the key areas of interest lie in:

- PR/education: promoting and raising awareness about 3D/AM toward the public;
- Networking/knowledge: stakeholder interaction and networking opportunities via an independent platform;
- Advocacy: representing 3D printing/AM to government and influencers

In doing so, according to respondents, the association should connect all stakeholder groups: equipment suppliers; service providers and makers; materials and consumables providers; vertical market end-users; software and service providers. From an individual member benefit perspective, respondents indicate that the primary reasons for joining an independent, member driven trade association would be:

- Peer-to-peer networking
- Access to first hand information
- Industry directory
- Interaction and community dialogue

# VI. Recommendations

With their varied knowledge and experience, yet similar goals, individuals and organisations active in the young 3DP/MA industry have much to gain in coming together under the umbrella of a dedicated 3D printing association. As most survey participants expressed confidence in a collective industry organisation and an interest in learning more about the results of this survey and 3DPA's next steps, much value would come out of convening a stakeholder meeting in order to brainstorm together and formalise the 3D printing community's goals and strategy.

Based on the survey, it is recommended to convene a stakeholder meeting in the autumn of 2015, with those respondents that indicated interest, as well as other stakeholders. Among other things, the stakeholder conference should define an answer to the following 5 key questions:

- ✓ **1. 3D printing/additive manufacturing: an industry of its own or integrated into 'upstream' vertical markets?**
  3D printing is a relatively new technology with (realised) potential in a wide variety of vertical market segments. It is process rather than a product. On the other hand, it also represents an entirely new business model. Should 3DPA embrace the 3D printing community's final users, or will the latter embrace this technology as integral part of their own value chain? Typically, technology driven associations involving different application areas focus on matters like promotion, knowledge, education and standardisation.
- ✓ **2. Membership representation: should 3DPA represent all stakeholder groups in the 3DP/AM eco system, or should it focus on specific target groups?**
  Currently, the 3D & AM community has a 'dual face'. On the one hand there are the creative, entrepreneurial individuals and pioneering professionals that are often represented in self-organised, open-source communities with a strong focus on B2C. On the other hand, there are the commercial organisations that have an established B2B interest. The value proposition of a member driven trade organisation differs from one stakeholder group to another. Should 3DPA aim to connect both worlds by 'bottom-up' segmentation of stakeholder groups, or should it focus on specific target groups? In the case of the latter, the priority listings of both opportunities and challenges for the near term seems to indicate that 3DPA should increasingly focus on B2B matters in the coming years.
- ✓ **3. Areas of interest: once the previous question has been answered, which would be the priority areas of interest?**
  Overall, promotion, technology education, knowledge exchange, networking and advocacy have been determined as the top 5 areas of interest. In its initial stage (given the limited availability of human, in-kind and financial resources), which areas of interest should 3DPA zero in on? In other words: which will be the 2-3 lead projects and activities for the next 3-5 years that will help 3DPA to establish its presence as a genuine, member-driven organisation?

- ✓ **4. Association culture: how to ensure active engagement of volunteer members?**
  Today's 'member paradox' is that many associations have started to treat their members as 'customers', while commercial organisations have embraced the concept of 'membership' as a vehicle to drive customer loyalty.
  Although respondents were not asked about their personal willingness to actively engage themselves, as a volunteer in 3DPA, it should be realised that in a 'member driven' association, member engagement (rather than the consumption of membership benefits!) is key to the success of the organisation.
  A review of organisations addressing collective organisation needs of the 3D printing community reveals a range of local or international, on-line knowledge platforms, social media communities and self-organised stakeholder groups. Sometimes, these are a spin-off of existing media or events dedicated at the 3D community (outside-in rather than inside-out).
  The open-source, collaborative culture of the young and dynamic 3D eco system seams to favour the adoption of a flexible, dynamic, 'hybrid' (i.e. face-to-face and virtual), 'association on-demand' culture, rather than the 'old school' association model. For such a business model to work, a clear sense of ownership (goal orientation), a culture of belonging (networking), and visible leadership that 'connects the dots' will be essential requirements.
- ✓ **5. How to structure, scope and govern the organisation?**
  Another factor to be considered is the legal entity and governance structure of the 3D Printing Association as an accredited body representing the 3D printing and additive manufacturing community. Whereas the previous question addresses the association culture and bottom-up dynamics, it should not be forgotten that industry advocacy, education and the establishment of standards of practice require a more formal status of the representative body that 3DPA would claim to be. This not only concerns the relationship with national or European authorities, but also possible engagement in the establishment of ISO or CEN standards (in which case representation via one or more national standards bodies is required). In order to be accredited, 3DPA needs to fulfil the necessary requirements as to governance, and transparency of membership and membership funding.
  In case of funding, the 'freemium' funding model that was suggested by some respondents (free entry but payment for additional services on demand) will have its limitations, since a certain level of basic organisation cost will be required.

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Prepared in collaboration with

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