Enterprise AR Research Agenda

- Category: Software/Hardware Issues & Market Research

Current Situation

- In many settings and use cases, enterprise AR is gaining traction. However, many challenges remain.
- To address their challenges, providers and customers must choose to:
  1. Invest internally (company resources) to address their challenges,
  2. Outsource custom research on specific areas to third parties (e.g., engineering firms),
  3. Rely on the suppliers of other commercial solutions to address the challenges for all their customers, or
  4. Look for “seeds” of future solutions (with potentially low technology readiness) from academic centers, private research institutes or projects conducted by public/private partnerships.
- A combination of these approaches is often used to reduce risk of relying on any one strategy.

Current Situation

- How to choose best research about topics pertaining to Augmented Reality?
  - In academia is often driven by a doctoral candidate's choice of novel domains or methodology and a group's need to quickly generate many peer-reviewed journal publications.
  - Industrial research institutes or groups within commercial product companies choose research topics based on their predicted revenue potential (ROI).
- There is not a clear data-driven vision guiding investments in enterprise AR research
  - There is not an objectively compiled, curated description of current customer and ecosystem needs that research could address.

Problems this Research Would Address

- Companies (and the AREA) can't fund all the research they (members) need
  - Their needs/gaps do not currently influence researcher choices
- Many researchers seek to address enterprise AR challenges but most (all?) lack specific guidance from customers encountering challenges to real world adoption
- There is not an objectively compiled, curated description of current customer and ecosystem needs (gap analysis) that *could be addressed through research*

Possible Questions the Research Would Answer

- What are the major enterprise AR customer and provider needs and gaps today that could receive higher attention from researchers?
- What are the principles and practices that funding organizations can encourage among those preparing research proposals and grant applications, and research teams can adopt to ensure that their projects have strong support and the results are highly relevant to large enterprises seeking to deploy AR?
- What is the vision and a recommended roadmap for AR research, and what are the overarching themes for AR research that will have the greatest potential for driving adoption in large enterprise?

Whose Problems Would this Project Address?

- *Researchers/research designers and those writing grants for funding* would
  - Focus on the use case categories
  - Develop/use widely recognized/accepted methodologies
- *Organizations funding research* would be able to
  - Call for proposals focusing on a variety of well-defined goals
  - Evaluate research methodologies objectively
  - Support projects and multi-project research focusing on gaps and needs
- *Enterprise AR customers and technology providers* would be able to more effectively transfer technologies from research to commercially-viable solutions

How would this research be conducted?

1. Literature review and analysis
    a. State of the art - current knowledge
    b. Gaps in knowledge
2. AREA committee and members' needs
    a. Interviews and surveys
    b. Compile topics submitted for AREA-directed projects
3. Conference and event presentations
    a. Extract themes
    b. Compile trends
4. Prepare a gap analysis and set of recommendations for future research themes/topics

Deliverables of this Project

- Web site on theAREA.org domain (e.g., http://researchagenda.theAREA.org)
  - Set of themes/threads and topics on which future research could significantly contribute to the advancement of the field of enterprise AR
  - Resources
    - Results of literature reviews, guidelines and heuristics,
    - categories of use cases
    - Methodologies
    - Metrics on which researchers could focus for most rapid and impactful technology transfer
- A webinar

Benefits to AREA Members

- Research efforts will more frequently focus on gaps and needs
- Research outcomes will have higher alignment with business objectives/metrics
- Enterprise AR customers and technology providers will be able to more effectively/quickly transfer technologies from research to commercially-viable solutions