

BIM IMPLEMENTATION

QATAR

CHALLENGES & BARRIERS

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Agenda BIM

- Introduction
- Study Motivations
- Qatar BIM Implementation
- Barriers to BIM implementation
- Recommendations

INTRODUCTION TO BIM

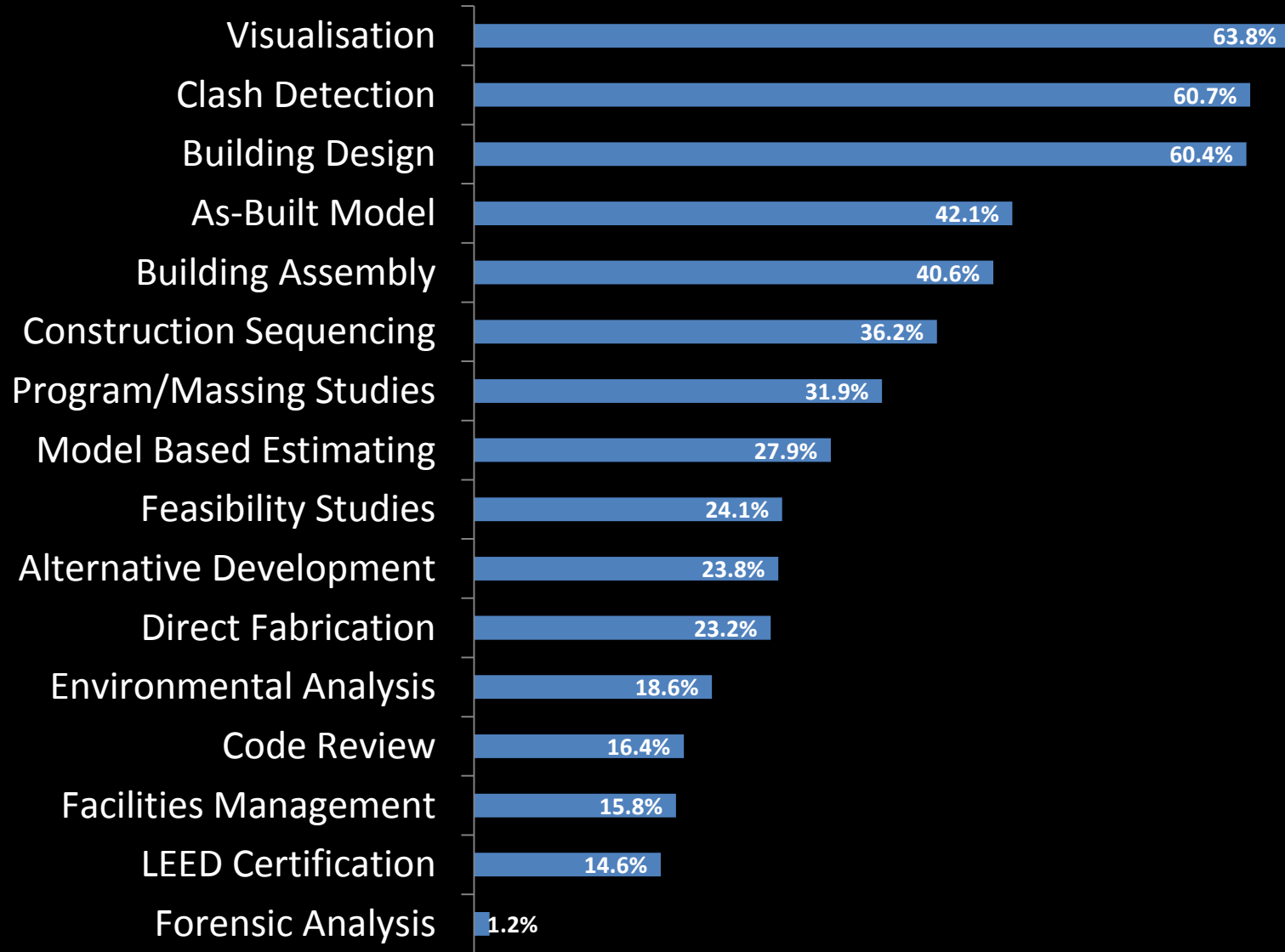
- BIM provides a three-dimensional digital Representation of buildings and their essential features.
- It is composed of intelligent building elements which include data attributes and parametric rules for each object.
- The BIM concept envisages virtual construction of a facility prior to its physical construction, in order to reduce uncertainty, improve safety, work out problems, and simulate and analyze potential impacts.
- BIM also minimizes the possibility of errors on sites by enabling conflict or 'clash detection', whereby computer models visually highlight to teams where parts of buildings may wrongly intersect.

INTRODUCTION TO BIM

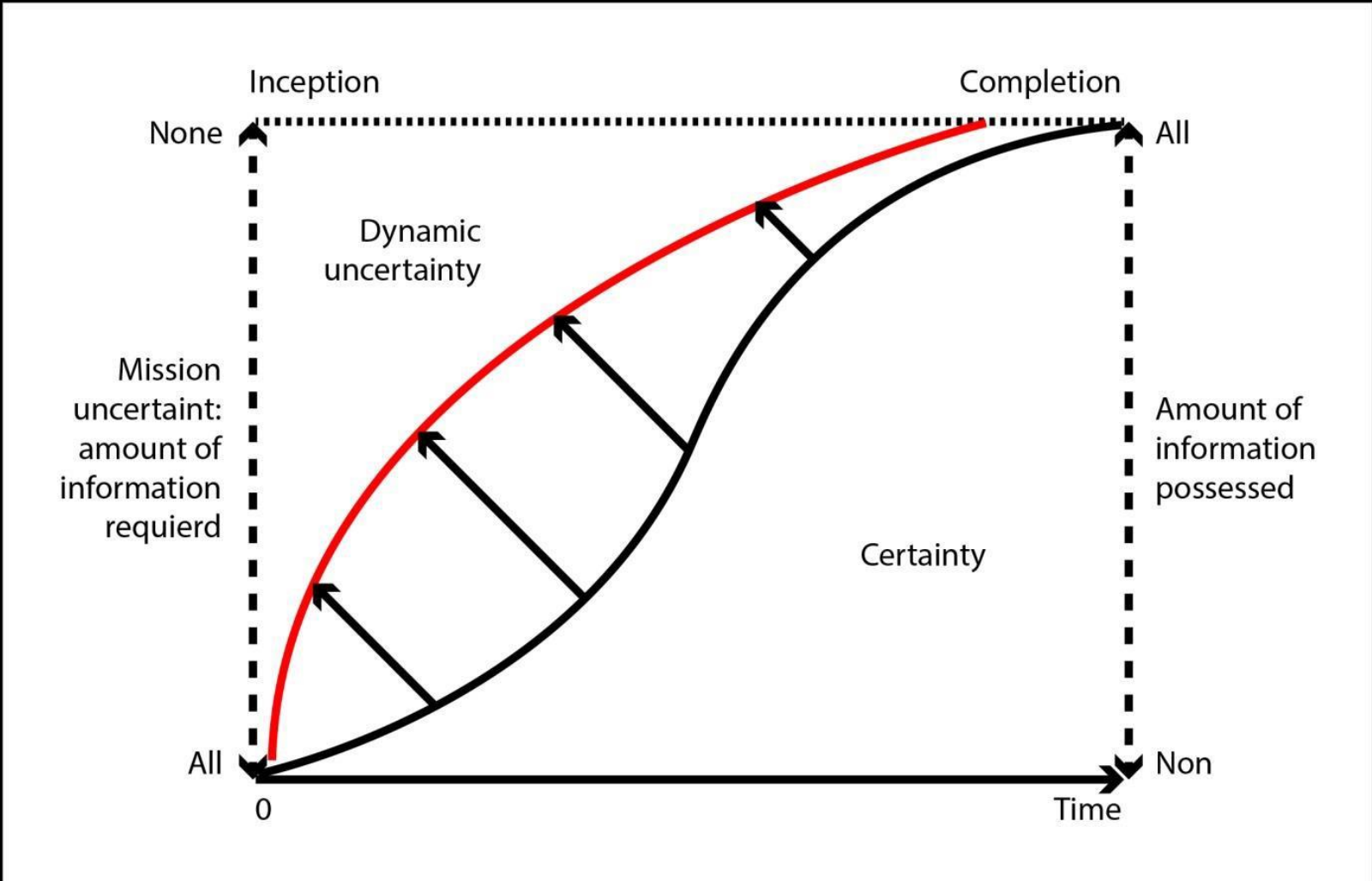
- BIM Models can be integrated with project timelines, schedule information and cost in what is known as BIM 4D and 5D model. State the desired objective.
- A 6D model can be delivered to the owner, when a construction project is ready to be closed-out. The “As-Built” BIM model is populated with all relevant building components information such as product data and details, maintenance/operation manuals, cut sheet specifications, photographs, warranty data, web links to product online sources, manufacturer information and contacts.

Uses of BIM

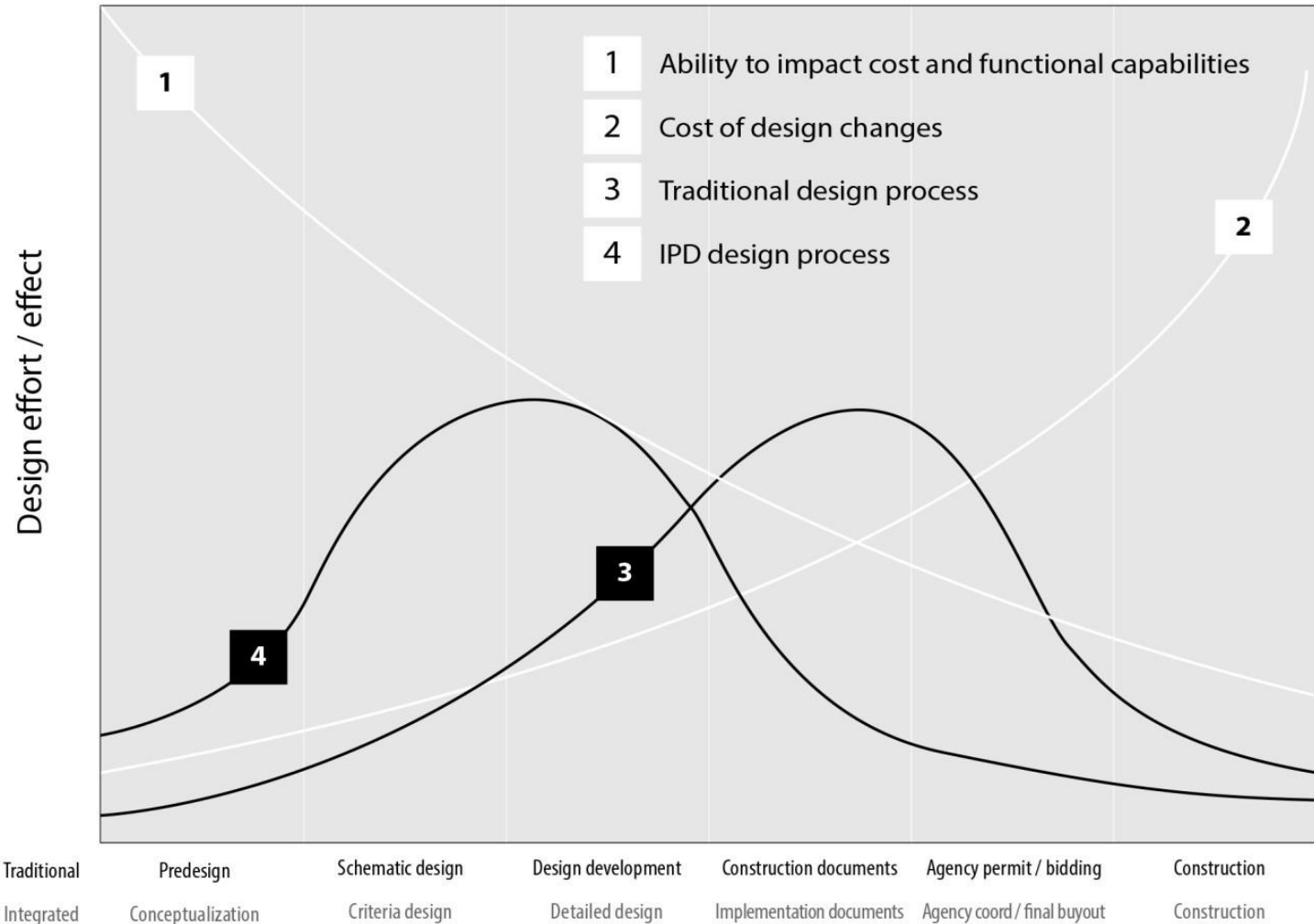
CHALLENGES & BARRIERS



BIM uses for the survey participants (Becerik-Gerber, 2010)



Reduced process uncertainty due to increase information availability provided by BIM during the project life cycle (Winch, 2010)



The MacLeamy Curve (The American Institute of Architects, 2007)

IMPORTANT FOR QATAR

WHY IS BI

- The government of Qatar announced plans to spend 205bn US dollars on various construction projects over the next five years (Reuters, 2014)
- Enormous budgets and complex projects expected to meet the 2022 deadline for the World cup.
- It is crucial that Qatar considers an improved and innovative techniques to ensure the delivery of such complex projects in such a short time frame.

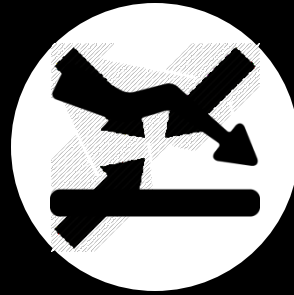
- Qatar's adoption of BIM demonstrates its commitment to the very best technology when it comes to implementing their national vision for Qatar 2030.
- Qatar to fund a 3 year project for development of a whole life cycle information flow approach enabled by BIM protocols & technologies for Qatar construction industry.

IN QATAR

BIM IMPLEMENTATION



Identify
Barriers



Reduce
Eliminate
Barriers



BIM
Readiness



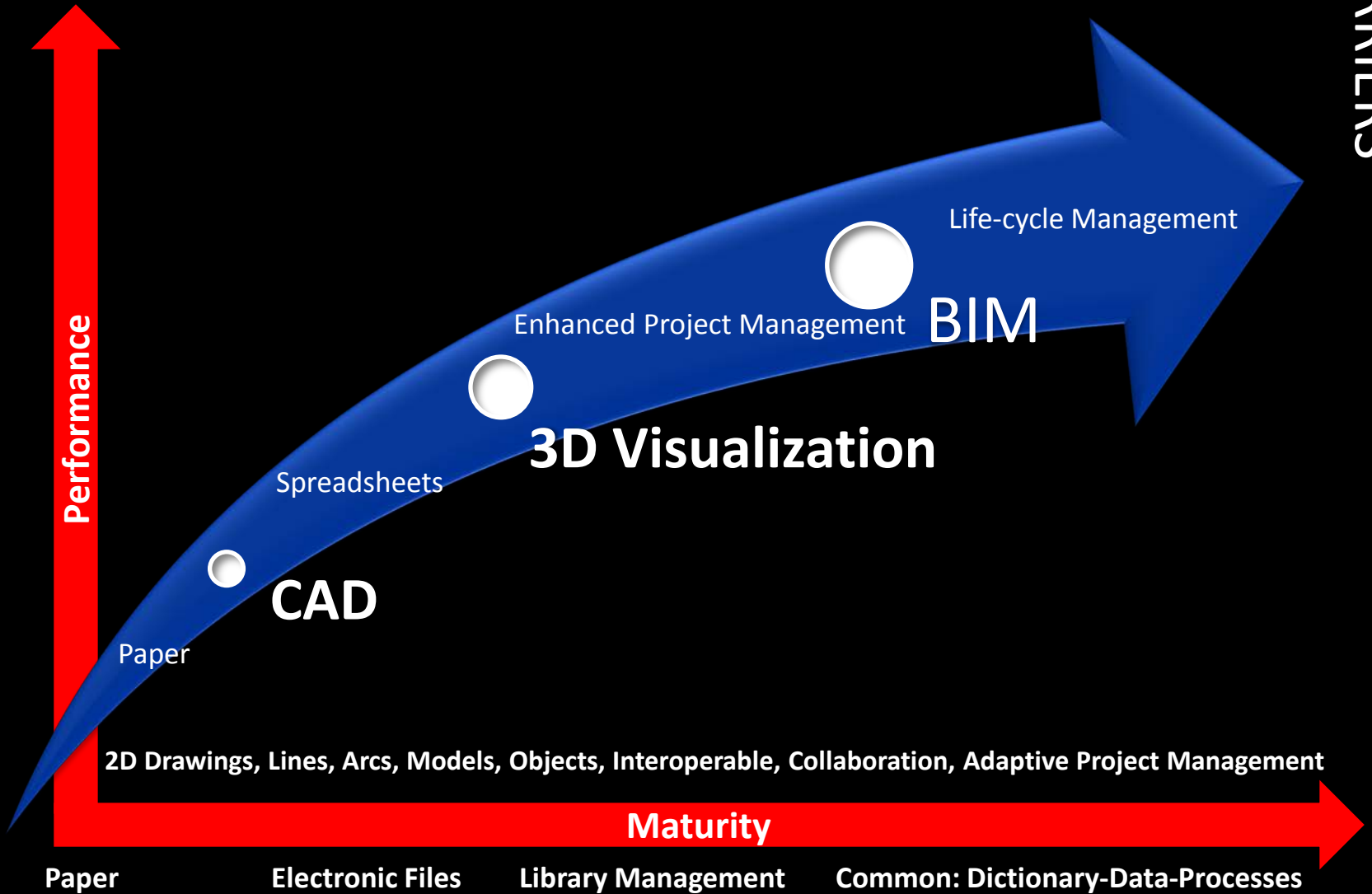
Adoption
of
BIM



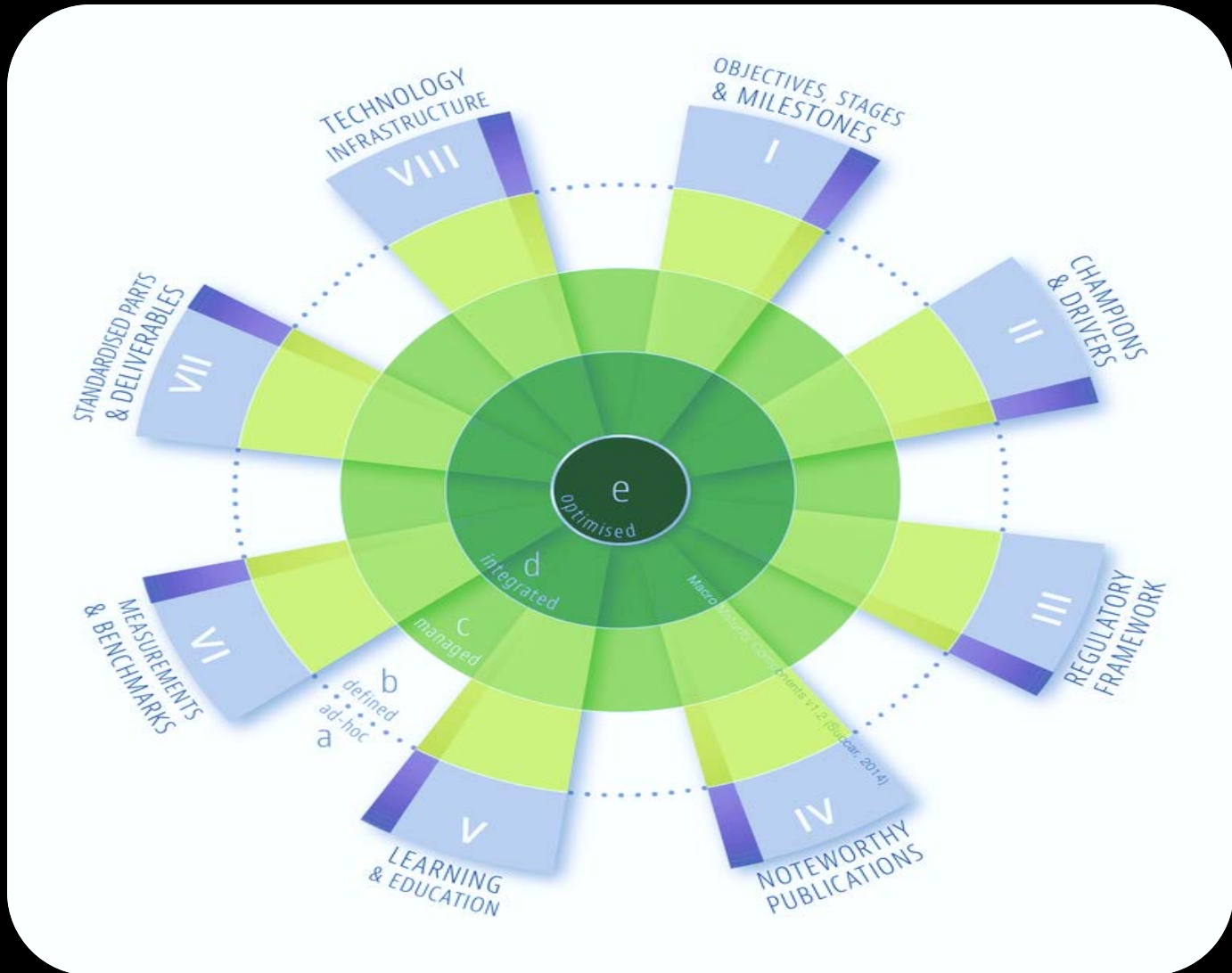
BIM
Maturity

Adoption

CHALLENGES & BARRIERS



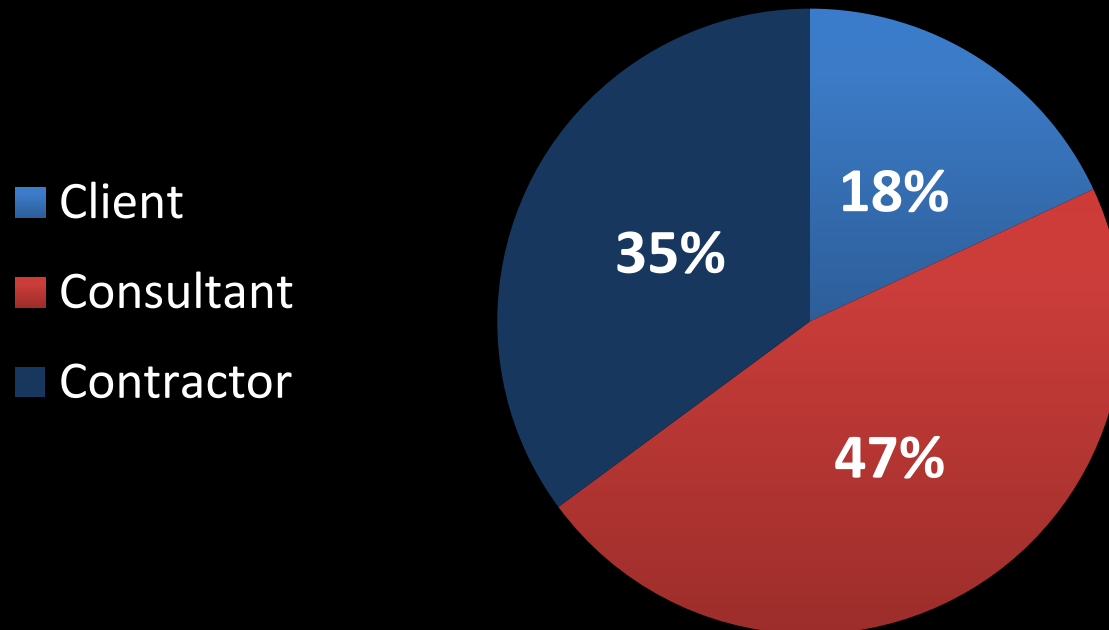
Country Maturity



(Succar, 2013)

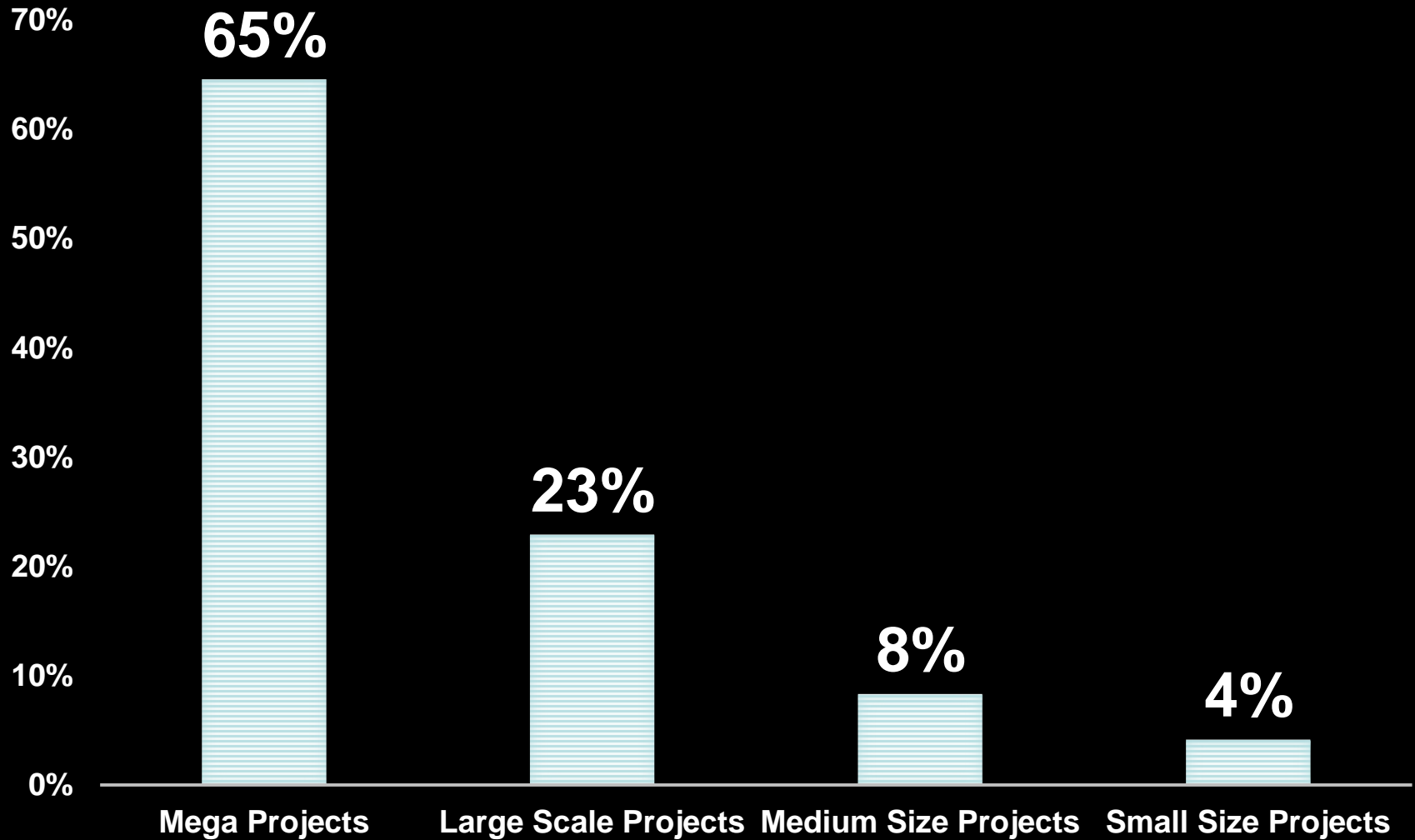
BIM Implementation

- An extensive literature review was carried out to identify challenges/barriers to BIM implementation in Qatar.
- Interviews and Online questionnaire to validate and measure the relative importance of the identified factors

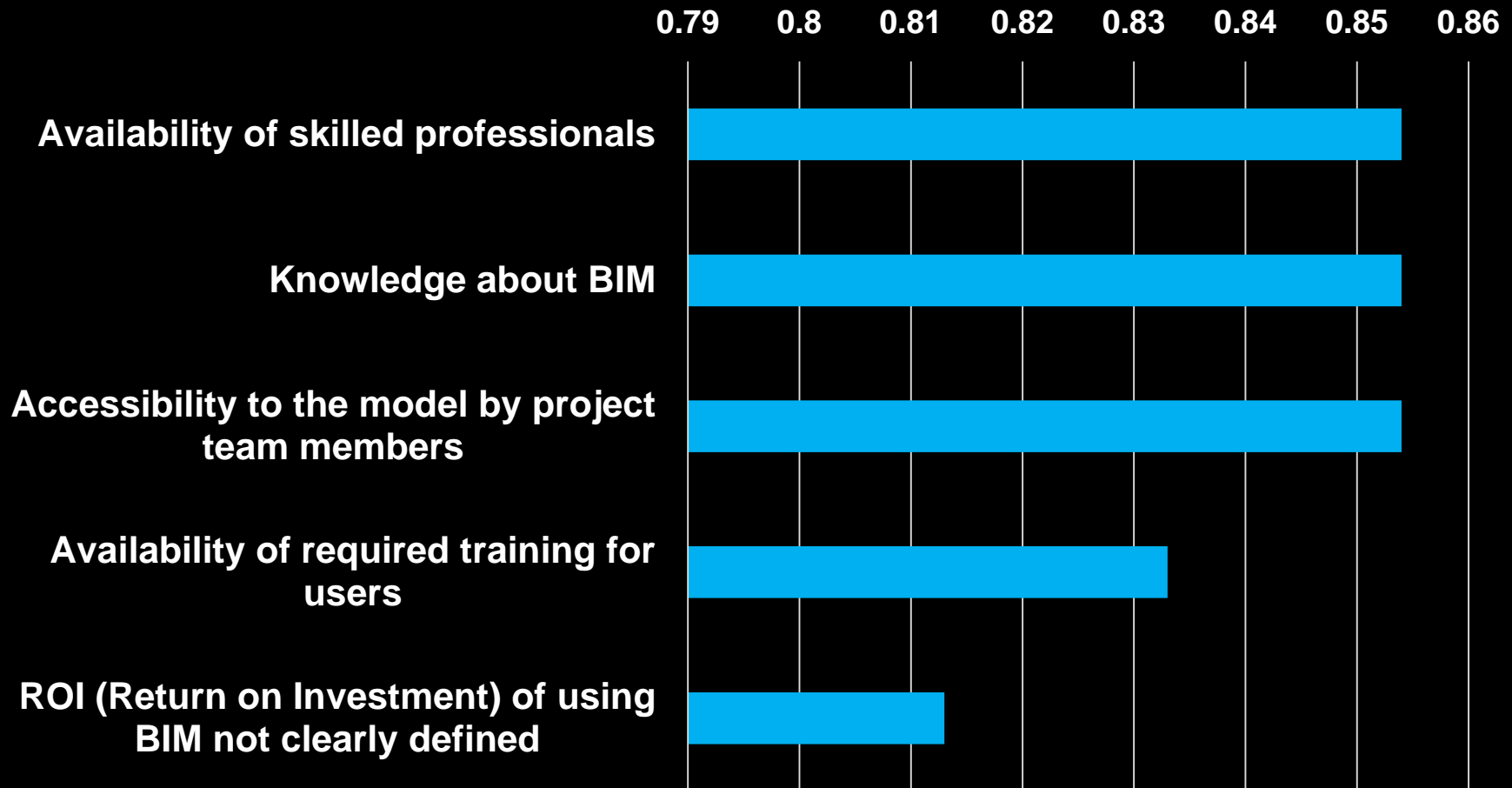


ANALYSIS:

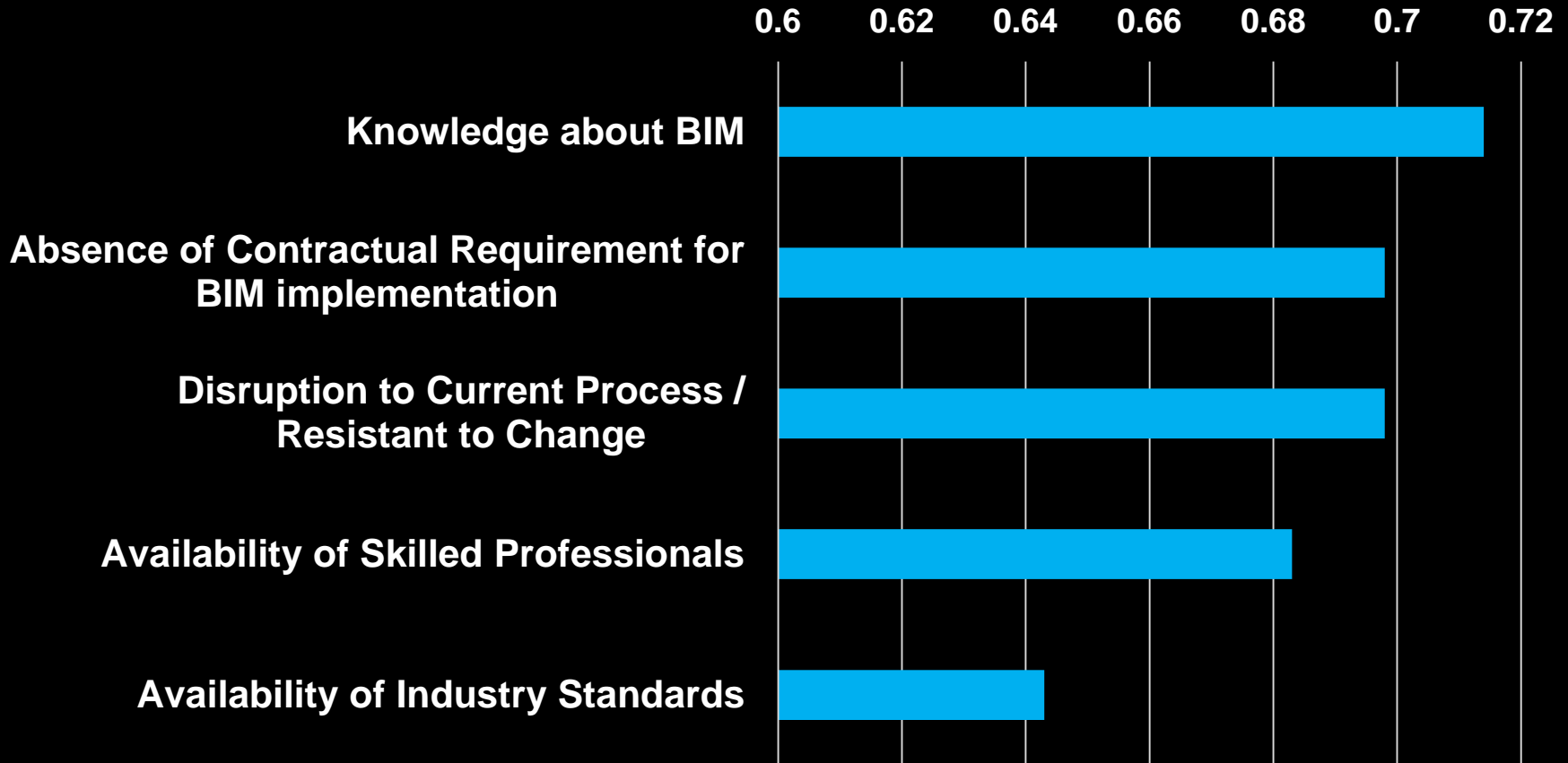
PROJECT SIZE



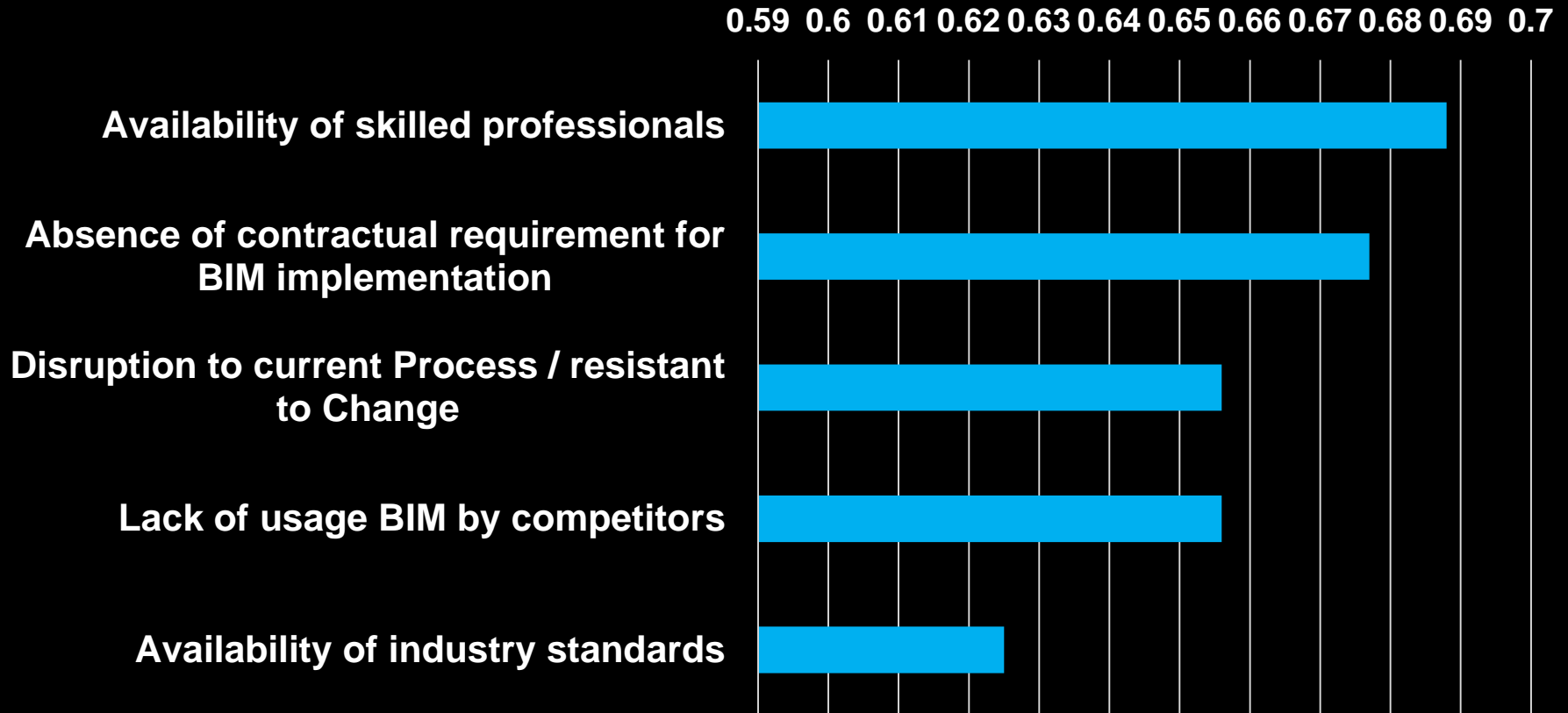
BARRIERS RANKING BY: CLIENTS/OWNERS



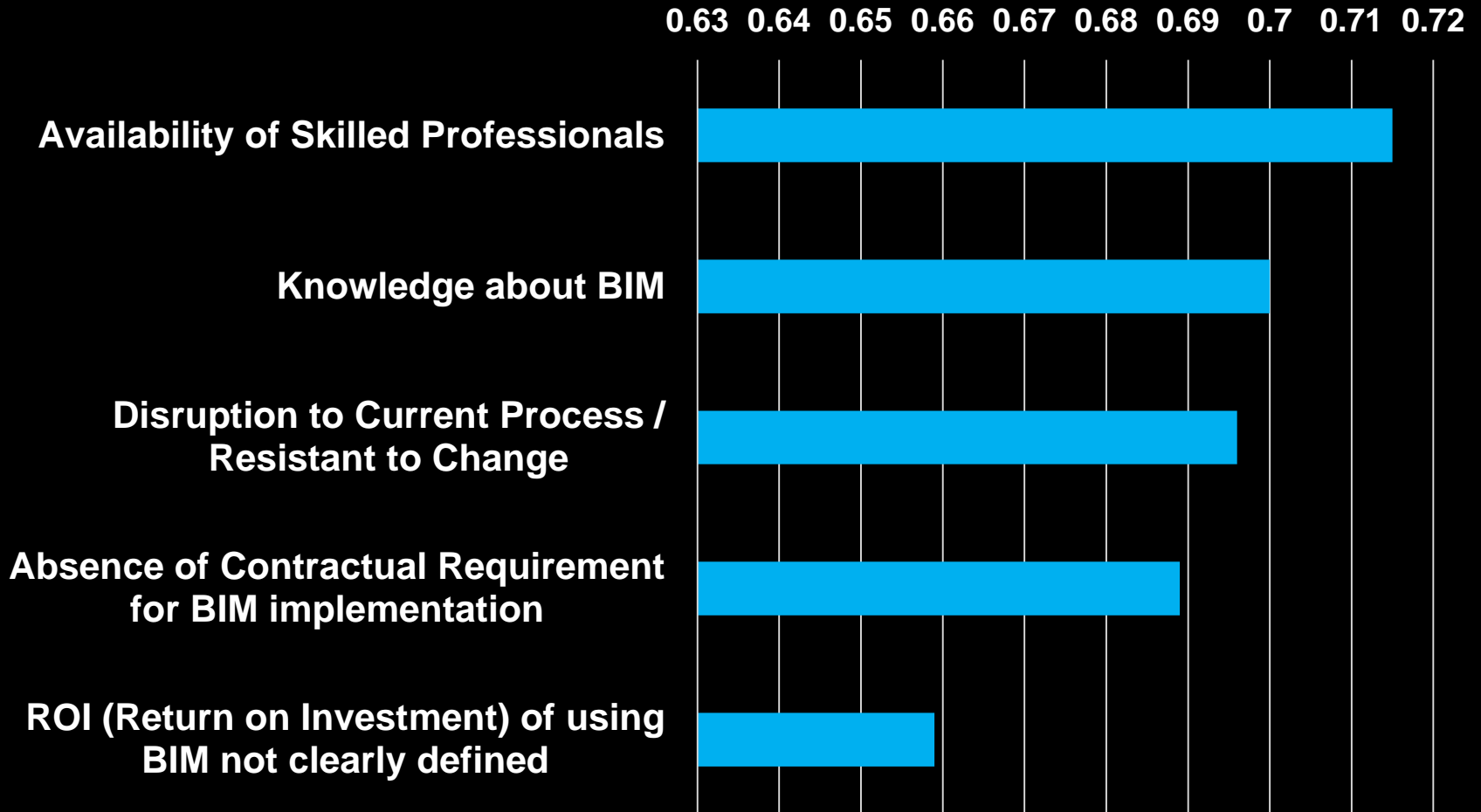
BARRIERS RANKING BY: CONSULTANTS/DESIGNERS



BARRIERS RANKING BY: CONTRACTOR/SUBCONTRACTOR



BARRIERS RANKING BY: OVERALL



Comparison to other Countries:

BIM Barriers - UK	BIM Barriers - US	BIM Barriers - Hong-Kong	BIM Barriers - Malaysia
Cost copyright & training	Availability of human Resources	Availability of Skilled Professionals	Knowledge about BIM
Unsuitable for project	Current technology is not enough	Lack of Training	Cost of implementation
Availability of human resources	Unsuitable for project	Lack of Standards	Lack of Training
People rejection to learn	Cost copyright & training	Lack of Client demand	Use of BIM not enforced by clients
Current technology is not enough	People rejection to learn	Lack of government's direction	BIM Affects current process practice

Recommendations

- ▣ More BIM training facilities to be introduced
- ▣ Construction legislations and standards should take cognizance of BIM
- ▣ Awareness events should take place in Qatar such as practitioners and academic conferences

Recommendations

- ▣ Move from standard contractual agreements to relational contracts
- ▣ In-depth study to understand the differences of views between construction parties
- ▣ More studies should focus on removing the identified challenges/barriers to exploit the benefits of using BIM.

Thank you