

# Benefits and Drawbacks of Reference Architectures

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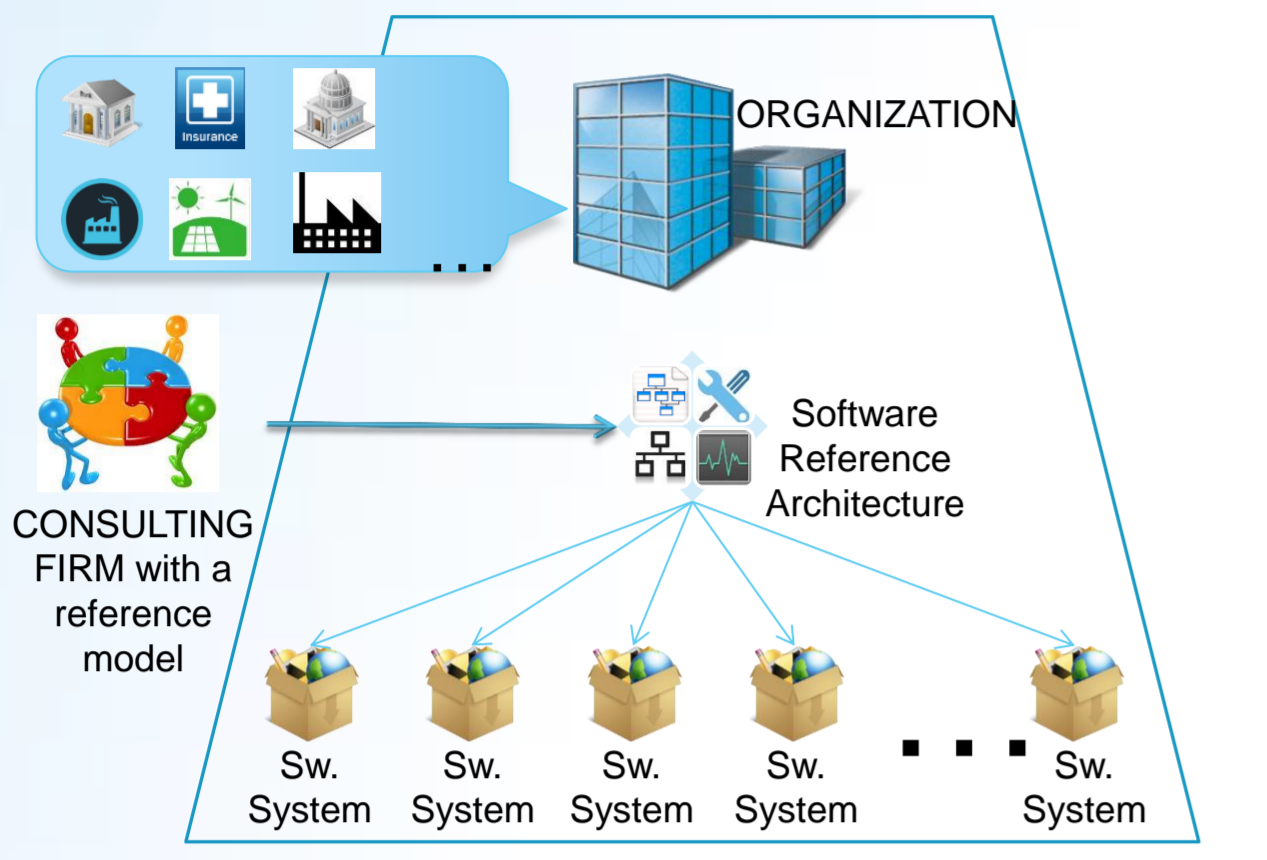
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## Industrial Context

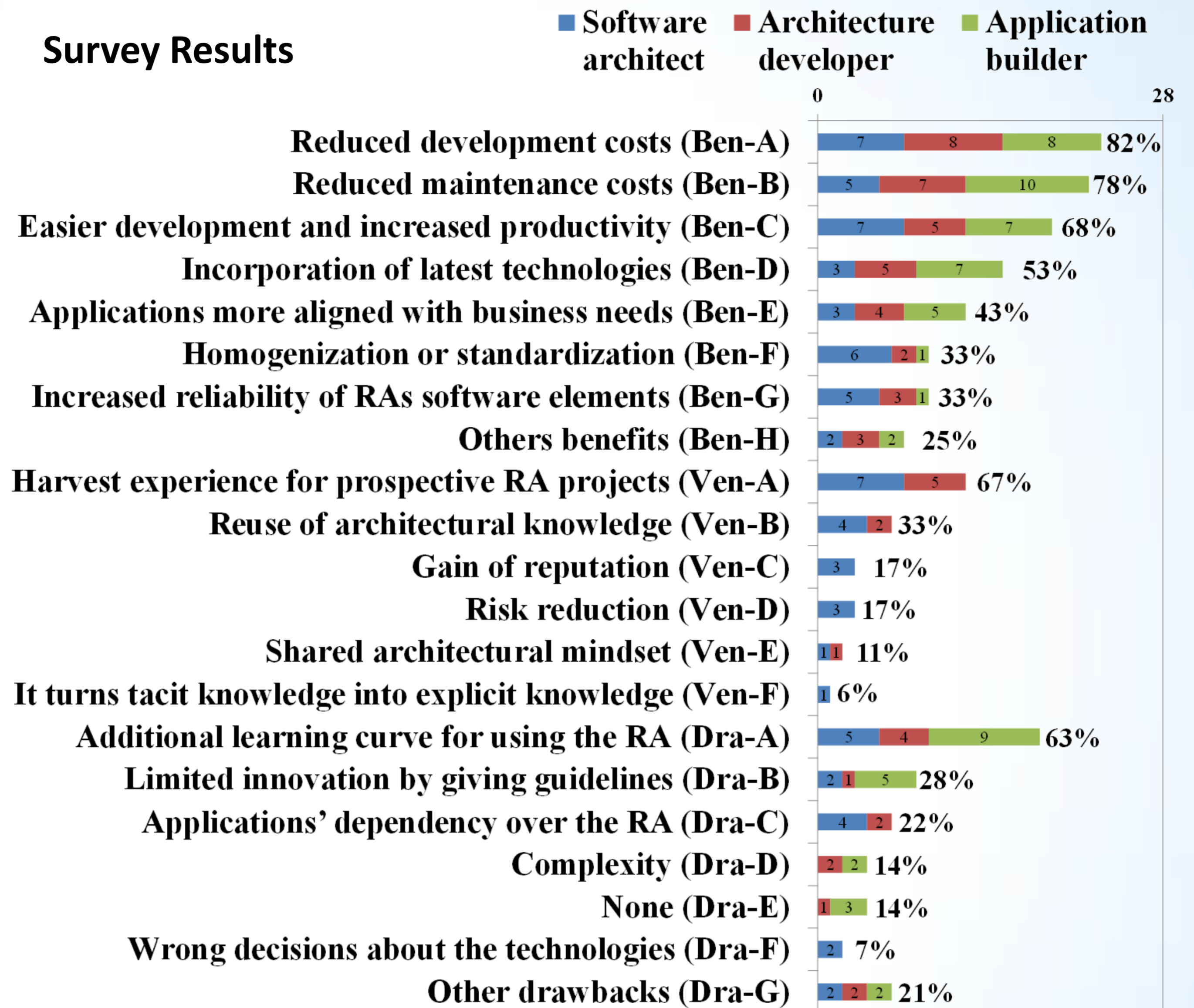


## Survey Details

*RQ: How practitioners perceive the potential benefits and drawbacks of Reference Architectures (RA)?*

- 9 RA projects from 9 organizations (developed by everis for its clients)
- 28 stakeholders:
  - 9 software architects (face-to-face interviews)
  - 9 architecture developers (on-line questionnaires)
  - 10 application builders (on-line questionnaires)

## Survey Results



## Claims from Literature

## Discussion from Survey Findings

Code	Benefit	Diagnostic	Findings
B1	Standardization	√	Ben-F
B2	Facilitation and productivity	√	Ben-C
B3	Reuse (reduced cost)	√	Ben-A, Ben-B, Ven-B
B4	Risk reduction	√	Ben-G, Ven-D
B5	Enhanced quality	±	Ben-E
B6	Interoperability	°	not mentioned
B7	Knowledge repository	√	Ven-A, Ven-F
B8	Flexibility for suppliers	±	Ven-E
B9	Mission, vision and strategy	×	mentioned for enterprise architectures
		new	Ven-D → Latest technologies used
		new	Ven-C → Reputation
Code	Drawback	Diagnostic	Findings
D1	Up-front investment	±	Dra-G
D2	Inefficient instantiation	±	Imp-C
		new	Dra-A → Learning curve
		new	Dra-B → Limited innovation
		new	Dra-C → RA dependency
		new	Dra-D → Complexity
		new	Dra-F → Wrong decisions

**Legend:**  
 1) Survey results confirm (√), partially support (±), do not explicitly mention (°), refuse theoretical claims (×), uncover new results (new).  
 2) Categories codes: *Ben*: benefits for RA acquisition organizations; *Ven*: benefits to RA vendors; *Dra*: drawbacks of using RAs.

## Conclusions

- Survey goals:
  - ✓ to analyze how RAs benefit and drawbacks are perceived by industrial practitioners
  - ✓ to corroborate or refuse existing research
- Main findings:
  - ✓ the support of already known RAs benefits, mainly cost savings in the development and evolution of software systems, and the facilitation of the design of concrete software architectures
  - ✓ new risks of adopting RAs emerged, such as additional learning curve, less room for innovation and complexity
  - ✓ how important are these benefits and drawbacks for each RA stakeholder type

## Acknowledgments

This work has been supported by “Cátedra everis” and the Spanish project TIN2010-19130-C02-00. We thank all participants of the survey.