

The Complete Framework of Disruptive Innovations

Mohammed Alghaffari

Snider Undergraduate Research Experience Program

Introduction

The topic of disruptive innovation is becoming more relevant everyday as new technological advancements emerge. Nevertheless, hundreds of ideas are emerging with no clear vision of their future or potential. This research analyzes different theories and frameworks regarding the disruption potential of new innovations and tries to come up with a complete framework that could be used as an evaluation tool

Methodology

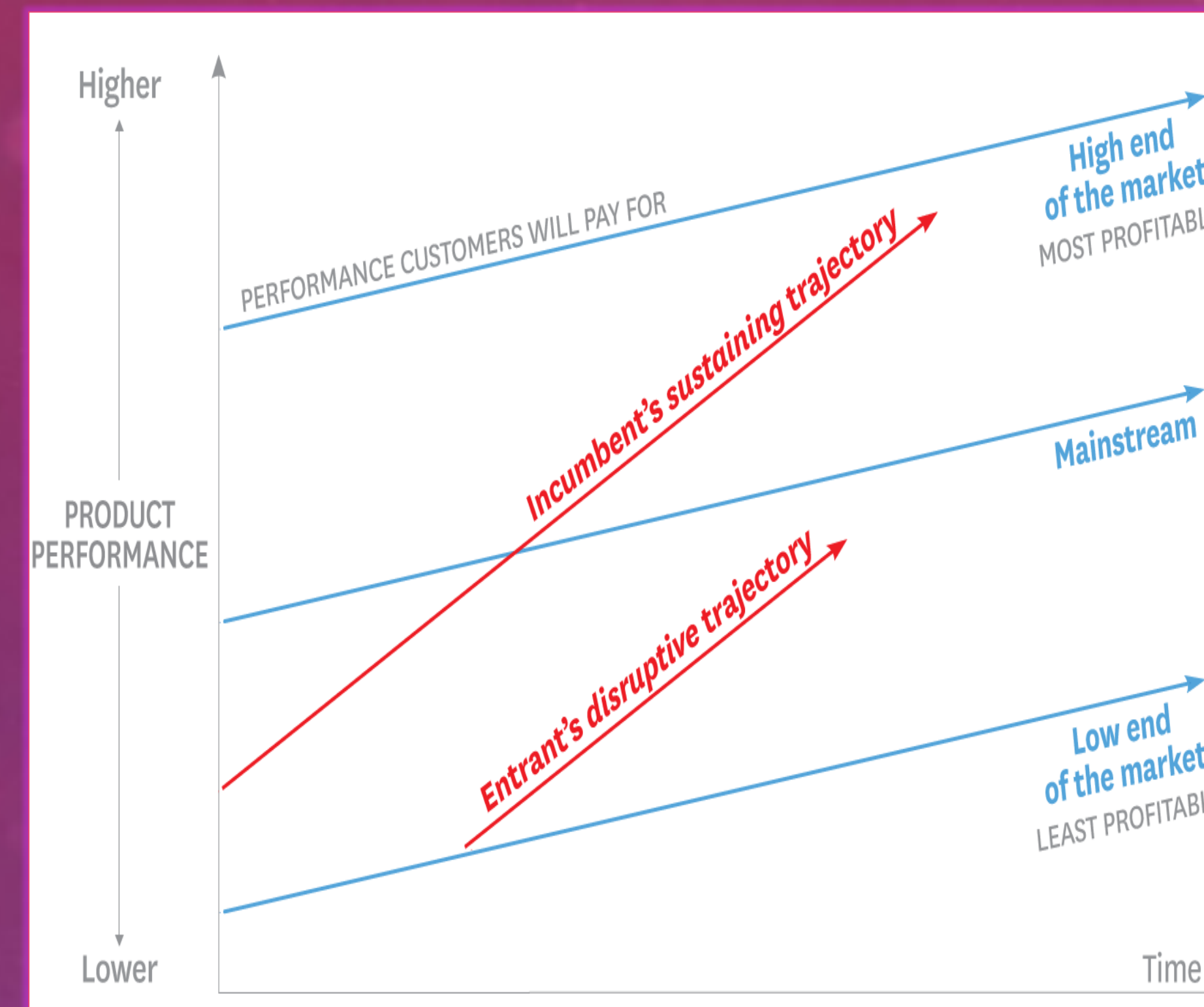
This research makes use of the following theories and Frameworks on disruptive innovations in order to formulate an evaluation tool:

- The Christensen Theory of Disruptive Innovation
- The Ecosystem Framework for Analyzing the pace of technological Substitution
- The D-Day, V-Day, and Bleak Days Framework of Disruptive Technology

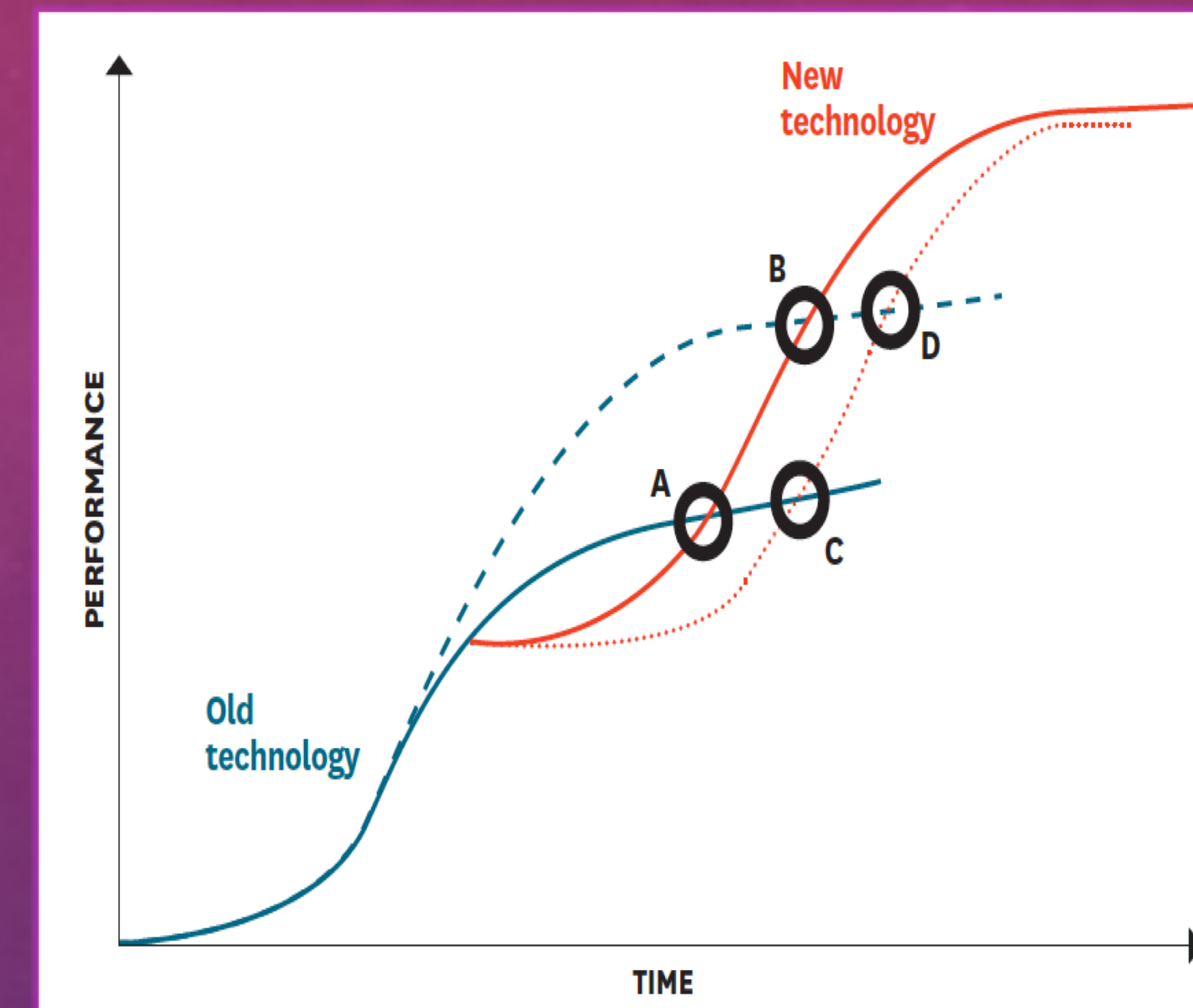
The research also includes a final discussion of the key idea of Network Effects as another essential component of the evaluation framework.

Discussion

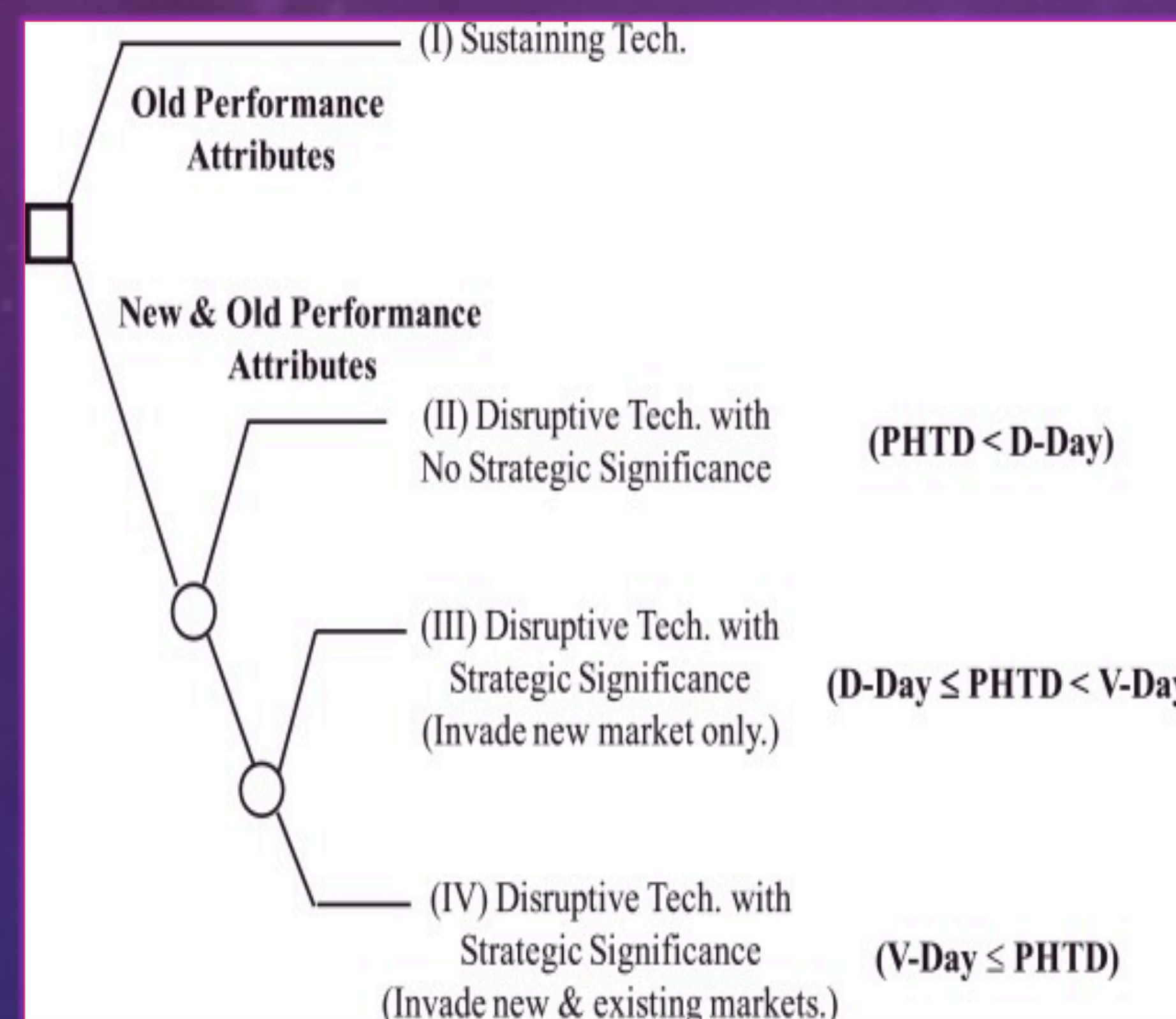
The analysis indicates that there are four key areas that need to be considered when evaluating a new disruptor: Demand, External factors, Supply, and Internal factors. Each area is reflected by a complimenting theory/framework respectively:



The Christensen model shows the emergence of a new disruptor from the demand point of view and in relation to consumer preference



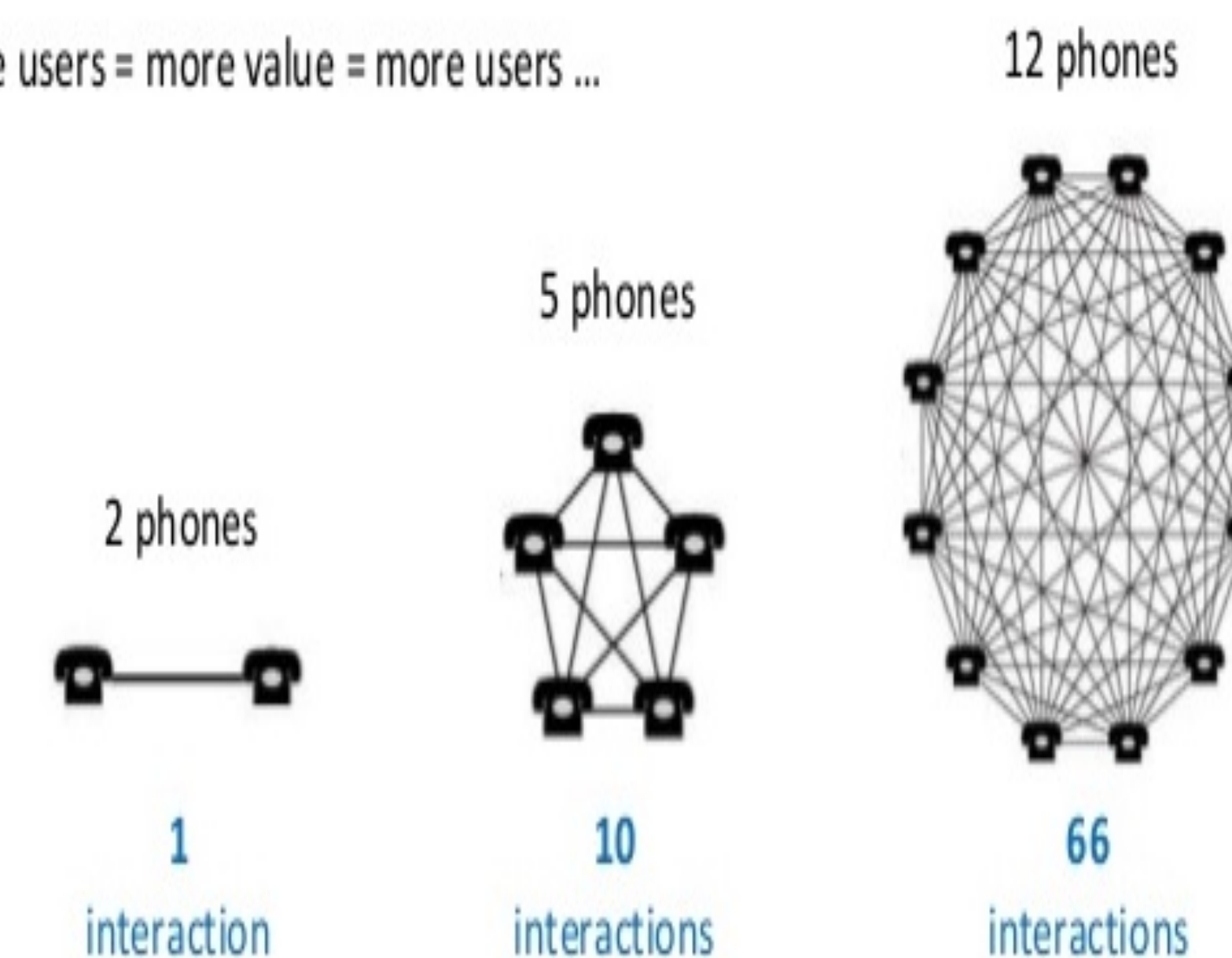
The Ecosystem model takes in consideration the external factors that effect the pace of emergence, creating a shift in the linear Christensen model and making it more accurate by showing the S-curves



The D-Day, V-Day, and Bleak Days model introduces the quantitative aspect of the analysis with relation to supply and offers us a decision tree for evaluation to help forecast the timing of technology disruption

PLATFORMS LEVERAGE NETWORK EFFECTS

More users = more value = more users ...



The idea of network effects represent the missing internal factor that none of the previous models placed much emphasis on. It is based on the simple rule that the value of a product/innocation increases as its customer base grows larger.

Conclusion

Each of the sources focuses on a specific area (Demand, External factors, Supply, and Internal factors), yet to accomplish a complete evaluation, one needs to consider all of them combined. Favoring one model over the other might cause an oversight of a key component of disruptive innovation. Furthermore, more research is needed to emphasize the importance of Network effects

References

- Adner, R., & Kapoor, R. (2016). Right Tech, Wrong Time. Harvard Business Review, 94(11), 60-67.
- Christensen, C. M. (1997). The innovators dilemma: when new technologies cause great firms to fail. Boston, MA: Harvard Business School.
- Chen, C., Zhang, J., & Guo, R. (2016). The D-Day, V-Day, and bleak days of a disruptive technology: A new model for ex-ante evaluation of the timing of technology disruption. European Journal Of Operational Research, 251(2), 562-574. doi:10.1016/j.ejor.2015.11.023

Acknowledgments

I would like to thank Dr. Jim Purtilo, Dr. Gorkem Ozer, and the Ed Snider Center faculty for supporting this research project