

## *Dialogue between Galileo and Lydie on Data Visualization*

- G: I am annoyed that an upstart, MapWise Software, is trafficking in my name to promote itself. I am being celebrated throughout the world because this is the 400th anniversary of my celestial discovery that four moons revolved around Jupiter. It's preposterous that my name is being used to promote software that has something to do with trademarks. It's a commercial endeavor; it has nothing to do with seeking the truth.*
- L: Well, I seem to remember that before you answered the call of being a philosopher, you also were engaged in commerce, designing and manufacturing a compass to help guide ships at sea. You worked with a tradesman in your home to make these compasses and sold them along with lessons to rich students. So you can't be opposed to commerce.*
- G: I needed to make extra money to supplement my salary as a professor of mathematics at the University of Padua. Venice in the 17th century was still the hub of world commerce, manufacturing silk, glassware, and books, and distributing these goods in its merchant galleys throughout the world. I would have been a fool not to have tried to improve my own lot with entrepreneurial activities.*
- L: So as long as you mentioned the beautiful glass of Venice, I can tell you about trademarks.*
- G: I recognize the value of naming things. I named the four moons around Jupiter the Medicean Stars in honor of the four Medici brothers in order to curry the favor of the Grand Duke Cosimo di Medici. It worked. I left Venice for Florence to work under Cosimo's patronage and focus on astronomy (no pun intended).*
- L: Naming the moons after the Medici doesn't qualify as a trademark, although it was clever of you. But you have drunk wine out of the most beautiful glassware made by Venetian guilds.*
- G: Yes, I particularly liked a type of colorless glass called 'cristallo'. The clarity of the glass uniquely identified it as being made by one particular Venetian glassmaking guild.*
- L: Yes, the clarity of "cristallo" glass is a trademark of that guild. A trademark can be color (or no color as with this special Venetian glass), a symbol, or a word uniquely identifying the source from which it came.*
- G: The French court among others paid handsomely for Venetian cristallo glassware.*
- L: Exactly, trademarks are good for business.*
- G: So a trademark is nothing new. The idea has been around since at least the Renaissance.*
- L: What has changed is that legal systems have been developed to protect trademarks. Trademark law protects the buyer so she can trust the source of goods. But it also protects the manufacturer. A Venetian guild is not going to invest in a special furnace to make the colorless glass unless it can*

*benefit from its investment and be known as the exclusive source of that glass. A trademark is one way to protect the profit incentive, the fuel that drives capitalism.*

*G: We didn't need software in the Renaissance to track trademarks. Why have you bothered to create MapWise for trademarks?*

*L: We did it for the same reason you developed the telescope to see the moons revolving around Jupiter.*

*G: You consistently take MapWise software too seriously. Visualization software for trademarks doesn't even remotely compare to mapping the moons around Jupiter.*

*L: I agree our respective goals are very different, but our methods are the same.*

*G: Indulge me. Tell me how our methods are the same. It will be a feat if you can prove this.*

*L: When you initially looked at Jupiter, you thought you saw three stars. But on subsequent evenings, these stars changed location and a fourth appeared. You drew this picture to show the change in their locations over a period of time, a rudimentary motion picture of Jupiter's moons.*



*This visualization of the moons' motion supported your stunning conclusion that they were not stars but moons revolving around a planet.*

*G: Yes, that's right.*

*L: Complex relationships sometimes can only be portrayed meaningfully using pictures. The technical term is data visualization.*

*G: And how does MapWise software rely on data visualization?*

*L: It's common to show flat data on a map, showing the location of a town, or the relative height of mountains with only one criterion mapped.*

*MapWise Software incorporates a database designed to trademark data which is linked to a map. The result is dynamic map that shows trademark data in a visually meaningful way.*



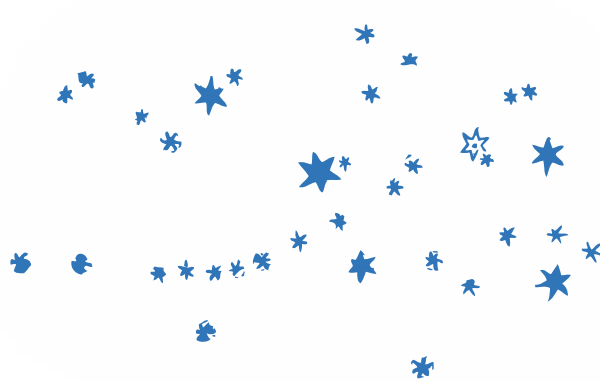
- G: And so a telescope is like computer software?*
- L: Yes, both are instruments that give us the power to see in a new way. It's too bad that you didn't have computer software in Venice.*
- G: I didn't need computer software. My visual imagination combined with sound empirical methods were all I needed.*
- L: That's why MapWise Software chose you as its hero, and in our modest way we have learned from you.*
- G: Thank you.*
- L: I should stop while I am ahead but I can't resist.*
- G: OK. Now what?*
- L: Would you kindly indulge me in another in another interview? While the world recognizes your achievements as an astronomer, a mathematician and philosopher, I believe you can teach us something about being an entrepreneur when you were in Venice.*
- G: For another day, perhaps.*

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*Stay posted for the next installment of Lydie's Dialogue with Galileo on his Top 10 Lessons to Entrepreneurs in the 21st century.*

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*MapWise Software, LLC, wishes to thank the University of Michigan Special Collections for use of the diagram of four moons revolving around Jupiter.*



*Galileo's drawing of the Pleiades star cluster from The Starry Messenger*