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## Dispatches from the Frontier

Musings on Entrepreneurship and Innovation

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## **Hubs are a Moving Target**

**The Tipping Point** is one of the most interesting, and possibly one of the most influential, books of the last few years. In it, author Malcolm Gladwell posits the importance of Connectors in the process of social epidemics:

Six degrees of separation doesn't mean that everyone is linked to everyone else in just six steps. It means that a very small number of people are linked to everyone else in a few steps, and the rest of us are linked to the world through those special few...these people on whom we rely more heavily than we realize...are Connectors...They are people whom all of us can reach in only a few steps...

The popular recognition of the existence of a small number of hubs through whom a large number of people are connected has contributed to the rise of **influencer marketing**, which is closely related to buzz, word-of-mouth, viral, and guerilla marketing. The premise of such marketing techniques is that by identifying and targeting hubs, one might enhance the chance of stimulating a type of social epidemic: the cascading adoption of one's product or service. To many of us, it's an appealing alternative to the indiscriminate carpet bombing approach of mass advertising.

Note, however, the underlying assumption that particular nodes in a social network play particular roles. For instance, Gladwell asserts:

...the success of any kind of social epidemic is heavily dependent on the involvement of people with a particular and rare set of social gifts.



This perspective implies that the **topology** of a social network is fairly static. In other words, a person who is a Connector today is likely to be a social hub tomorrow. However, new research suggests otherwise (*Complexity* 12: 59-63, 2006).

A study of the communication among 57,158 e-mail users over a period of 113 days suggests tha social networks are turbulent rather than static. By measuring the nodal degree of centrality, the researchers confirmed a now familiar pattern, but with a surprising twist:

...a small number of highly connected nodes have great importance in the connectivity of the network. However, although each daily network has highly connected nodes, we found that they were not the same nodes. The degree of a node varied dramatically over time...Perhaps even more surprisingly, the nodes that are highly ranked in the aggregate network [i.e. over the entire sample period] are not even *on-average* important in daily networks...This shows that highly connected nodes in the aggregate network only play a moderate role in the daily networks.

The implication is influencer marketing may be even more difficult than we might have generally assumed:

The prominence of nodes (as measured by degree) within the networks fluctuates widely from day to day, and a high degree in the aggregate network does not predict a high degree for individual days. Our conclusions are in sharp contrast to previous complex network research, which emphasizes the importance of aggregate nodal centrality in a static network topology...Dynamic centrality implies that targeting nodes with the highest degrees at one time only weakly affects the nodes that are highly connected at another time.

If the researchers are correct, then Gladwell would appear to be wrong in at least one respect: Connectors are not necessarily "people with a special gift for bringing the world together." In fact, given enough time, all of us are likely to play the role of hub in our respective networks. If all of us are hubs, there may still be a future for mass advertising.

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