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A summary of Diffusion of Innovations

By Les Robinson

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Diffusion of Innovations seeks to explain how innovations are taken up in a population. An innovation is an idea, behaviour, or object that is perceived as new by its audience.

Diffusion of Innovations offers three valuable insights into the process of social change:

- What qualities make an innovation spread.
- The importance of peer-peer conversations and peer networks.
- Understanding the needs of different user segments.

These insights have been tested in more than 6000 research studies and field tests, so they are amongst the most reliable in the social sciences.

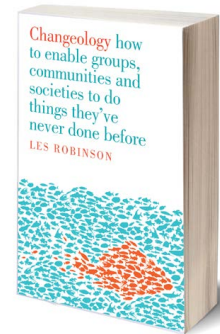
What qualities make innovations spread?

Diffusion of Innovations takes a radically different approach to most other theories of change. Instead of focusing on persuading individuals to change, it sees change as being primarily about the evolution or "reinvention" of products and

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behaviours so they become better fits for the needs of individuals and groups. In Diffusion of Innovations it is not people who change, but the innovations themselves.

Why do certain innovations spread more quickly than others? And why do others fail? Diffusion scholars recognise five qualities that determine the success of an innovation.

1) Relative advantage

This is the degree to which an innovation is perceived as better than the idea it supersedes by a particular group of users, measured in terms that matter to those users, like economic advantage, social prestige, convenience, or satisfaction. The greater the perceived relative advantage of an innovation, the more rapid its rate of adoption is likely to be.

There are no absolute rules for what constitutes "relative advantage". It depends on the particular perceptions and needs of the user group.

2) Compatibility with existing values and practices

This is the degree to which an innovation is perceived as being consistent with the values, past

experiences, and needs of potential adopters. An idea that is incompatible with their values, norms or practices will not be adopted as rapidly as an innovation that is compatible.

3) Simplicity and ease of use

This is the degree to which an innovation is perceived as difficult to understand and use. New ideas that are simpler to understand are adopted more rapidly than innovations that require the adopter to develop new skills and understandings.

4) Trialability

This is the degree to which an innovation can be experimented with on a limited basis. An innovation that is trialable represents less risk to the individual who is considering it.

5) Observable results

The easier it is for individuals to see the results of an innovation, the more likely they are to adopt it. Visible results lower uncertainty and also stimulate peer discussion of a new idea, as friends and neighbours of an adopter often request information about it.

According to Everett Rogers, these five qualities determine between 49 and 87 percent of the variation in the adoption of new products. ¹

These five qualities make a valuable checklist to frame focus group discussions or project evaluations. They can help identify weaknesses to be addressed when improving products or behaviours.

Reinvention is a key principle in Diffusion of Innovations. The success of an innovation depends on how well it evolves to meet the needs of more and more demanding and risk-averse

individuals in a population (the history of the mobile phone is a perfect example).

A good way to achieve this is to make users into partners in a continuous process of redevelopment. Computer games companies, pharmaceutical corporations and rural research institutes are examples of organisations that seek to make users active partners in improving innovations by supporting user communities or by applying participative action research techniques.

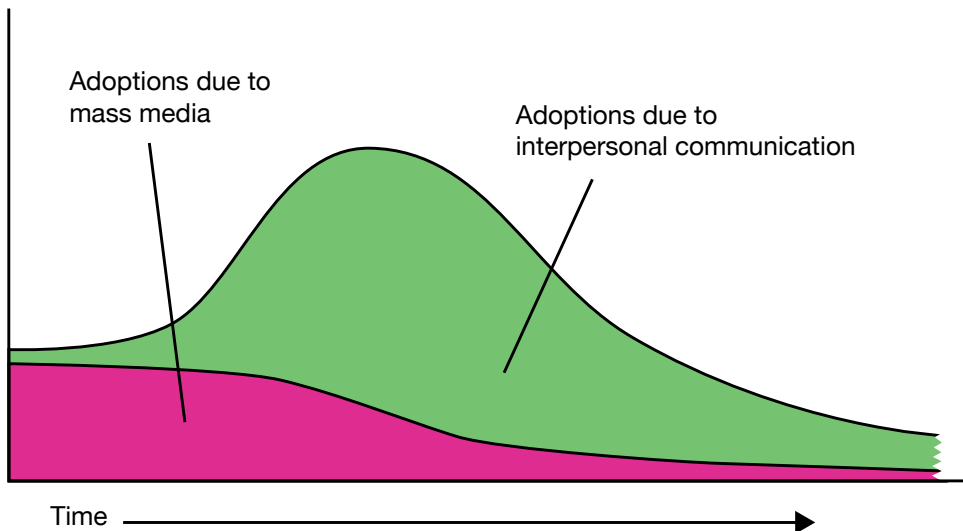
Many computer games are now built with the intention that they will be modified by enthusiastic users. Says consumer behaviour expert, Francine Gardin. "They're actually participating in the design of the game. These consumers are really passionate about the game – it's almost like a cult. They have an incredible sense of loyalty and ownership of that brand. Instead of complaining, they fix the product."²

The concept of reinvention is important because it tells us that no product or process can rest on its laurels: continuous improvement is the key to spreading an innovation.

The importance of peer-peer conversations and peer networks

The second important insight is that impersonal marketing methods like advertising and media stories may spread information about new innovations, but it's conversations that spread adoption.

Why? Because the adoption of new products or behaviours involves the



The Bass Forecasting Model. Source: Mahajan, Muller and Bass (1990) as reproduced in Rogers, E.M. (2003) p210.

management of risk and uncertainty. It's usually only people we personally know and trust – and who we know have successfully adopted the innovation themselves – who can give us credible reassurances that our attempts to change won't result in embarrassment, humiliation, financial loss or wasted time. They are the people whose lived example is the best teacher of how to adopt an innovation.

Early adopters are the exception to this rule. They are on the lookout for advantages and tend to see the risks as low because they are financially more secure, more personally confident, and better informed about the particular product or behaviour. Often they will grasp at innovations on the basis of no more than a well worded news article. The rest of the population, however, see higher risks in change, and therefore require assurance from trusted peers that an innovation is do-able and provides genuine benefits.

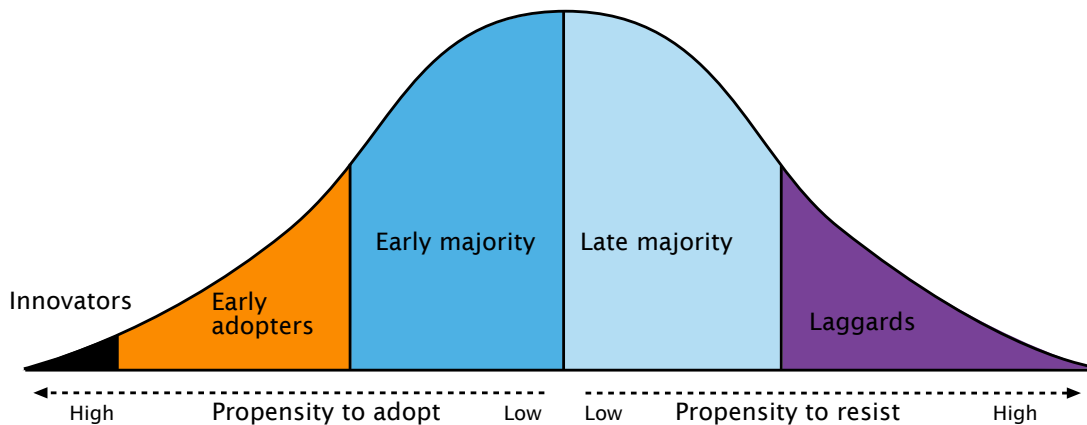
As an innovation spreads from early adopters to majority audiences, face-to-face communication therefore

becomes more essential to the decision to adopt. This principle is embodied in the Bass Forecasting Model (above), which illustrates how face-to-face communication becomes more influential over time, and mass media less influential.

The emphasis on peer-peer communication has led diffusion scholars to be interested in peer networks. Many diffusion-style campaigns now consciously attempt to utilise peer networks, for instance by using Popular Opinion Leader techniques or various "viral marketing" methods. These methods – which are becoming increasingly popular – aim to recruit well-connected individuals to spread new ideas through their own social networks.

Opinion leader tactics have been successful in raising the standards of practice by medical doctors,³ promoting weatherisation of homes,⁴ and encouraging safe sex in gay communities.⁵

Rogers notes that by 2003 there had been eight randomised controlled



Diffusion scholars believe any population or social network can be broken down into five segments, for any given innovation.

trials – the gold standard in evaluation – all of which demonstrated the success of opinion leader tactics in producing behavioural changes.

Understanding the needs of different user segments

Diffusion researchers believe that a population can be broken down into five different segments, based on their propensity to adopt a specific innovation: innovators, early adopters, early majorities, late majorities and laggards.

Each group has its own “personality”, at least as far as its attitude to a particular innovation goes.

When thinking about these groups, don’t imagine it’s your job to shift people from one segment to another. It doesn’t work that way. It’s best to think of the membership of each segment as static. Innovations spread when they evolve to meet the needs of successive segments.

Innovators:

The adoption process begins with a tiny number of visionary, imaginative innovators. They often lavish great time, energy and creativity on developing new ideas and gadgets.

And they love to talk about them. Right now, they’re the ones busily building stills to convert cooking oil into diesel fuel and making websites to tell the world about it. Unfortunately their one-eyed fixation on a new behaviour or gadget can make them seem dangerously idealistic to the pragmatic majority. Yet no change program can thrive without their energy and commitment.

How to work with innovators:

- Track them down and become their “first followers”⁷, providing support and publicity for their ideas.
- Invite keen innovators to be partners in designing your project.

Early adopters:

Once the benefits start to become apparent, early adopters leap in. They are on the lookout for a strategic leap forward in their lives or businesses and are quick to make connections between clever innovations and their personal needs.

They love getting an advantage over their peers and they have time and money to invest. They’re often fashion conscious and love to be seen as

leaders: social prestige is one of their biggest drivers. Their natural desire to be trend setters causes the “take-off” of an innovation. Early adopters tend to be more economically successful, well connected and well informed and hence more socially respected. Their seemingly risky plunge into a new activity sets tongues wagging. Others watch to see whether they prosper or fail, and people start talking about the results. And early adopters like to talk about their successes. So the buzz intensifies. What early adopters say about an innovation determines its success. The more they crow and preen, the more likely the new behaviour or product will be perceived positively by the majority of a population.

Early adopters are vital for another reason. They become an independent test bed, ironing out the chinks and reinventing the innovation to suit mainstream needs.

Fortunately early adopters are an easy audience. They don't need much persuading because they are on the lookout for anything that could give them a social or economic edge. When you call a public meeting to discuss energy-saving devices or new farming methods, they're the ones who come along. They're the first people in your block to install a water tank, mulch their garden, buy laptops for their kids, or install solar panels.

Some authorities talk about a “chasm” between visionary early adopters and pragmatic majorities.⁸ They think the chasm explains why many products are initially popular with early adopters but crash and burn before they reach mass markets. Everett Rogers disagreed⁹ with the idea of a chasm. He thought early adopters

and majorities formed a continuum. However most early adopters still have radically different interests and needs from most majorities, so even if there's no real chasm it's a useful mental construct that warns us against the easy assumption that one size fits all. Once again, what makes products or practices spread is not persuasion. It's the whether the product or behaviour is being reinvented to become easier, simpler, quicker, cheaper, and more advantageous.

How to work with early adopters:

- Offer strong face-to-face support for a limited number of early adopters to trial the new idea.
- Study the trials carefully to discover how to make the idea more convenient, low cost and marketable.
- Reward their egos e.g. with media coverage.
- Promote them as fashion leaders (beginning with the cultish end of the media market).
- Recruit and train some as peer educators.
- Maintain relationships with regular feedback.

Early majority:

Assuming the product or behaviour leaps the chasm, it may eventually reach majority audiences. Early majorities are pragmatists, comfortable with moderately progressive ideas, but won't act without solid proof of benefits. They are followers who are influenced by mainstream fashions and wary of fads. They want to hear “industry standard” and “endorsed by normal,

respectable folks”.

Majorities are cost sensitive and risk averse. They are looking for simple, proven, better ways of doing what they already do. They require guaranteed off-the-shelf performance, minimum disruption, minimum commitment of time, minimum learning, and either cost neutrality or rapid payback periods. And they hate complexity. They haven't got time to think about your product or project. They're too busy getting the kids to football and running their businesses. If they do have spare time they're not going to spend it fussing around with complicated, expensive, inconvenient products or behaviours. They want to hear “plug-and-play”, “no sweat” or “user-friendly” and “value for money”.

How to work with the early majority:

- Offer give-aways or competitions to stimulate buzz.
- Use mainstream advertising and media stories featuring endorsements from credible, respected, similar folks.
- Lower the entry cost and guarantee performance.
- Redesign to maximise ease and simplicity.
- Cut the red tape: simplify application forms and instructions.
- Provide strong customer service and support.

Late majority:

They are conservative pragmatists who hate risk and are uncomfortable your new idea. Practically their only driver is the fear of not fitting in, hence they will follow mainstream

fashions and established standards. They are often influenced by the fears and opinions of laggards.

How to work with the late majority:

- Focus on promoting social norms rather than just product benefits: they'll want to hear that plenty of other conservative folks like themselves think it's normal or indispensable.
- Keep refining the product to increase convenience and reduce costs.
- Emphasise the risks of being left behind.
- Respond to criticisms from laggards.

Laggards:

Meanwhile laggards hold out to the bitter end. They are people who see a high risk in adopting a particular product or behaviour. Some of them are so worried they stay awake all night, tossing and turning, thinking up arguments against it. And don't forget they might be right! It's possible they are not really not laggards at all, but innovators of ideas that are so new they challenge your paradigms! In the early stages, where you are focusing on early adopters, you can probably ignore the views of laggards, but when you come to work with late majorities you'll need to address their criticisms, because late majorities share many of their fears.

How to work with laggards:

- Give them high levels of personal control over when, where, how and whether they do the new behaviour.
- Maximise their familiarity with new

products or behaviours. Let them see exactly how other laggards have successfully adopted the innovation.

Each of these adopter personalities is very different. It's vital to know which one you are addressing at a given time. And no, you usually can't address them all at once. Why? Because products and behaviours only mature gradually. The exception is when you have customized quite different products or behaviours for each group. Weight Watchers is an example. It has a traditional calorie-counting method that suits early adopters, a "points value" method that suits early majorities, and a "no count" system for everyone else.

How big is each segment? Rogers went as far as assigning precise notional percentages for each segment:

Innovators: 2.5%
Early Adopters: 13.5%
Early majority: 34%
Late majority 34%
Laggards 16% ¹⁰

However the "20:60:20 Rule" is a good all-purpose rule of thumb.

When designing a change project you need to know one vital fact: the percentage in a given social system who have already taken up the innovation. That figure tells you which segment you are addressing next. It gives you great insight into how to design your project and how to pitch your communications.

Of course, no one is an innovator or a laggard about all new ideas. That would be too exhausting. In reality,

most people are majorities about most things, and only innovators or laggards about certain specific things. We wouldn't say "John is a laggard", we'd say "John is an iPhone laggard" or "George Bush snr is a broccoli laggard".

Reading

The standard text is Everett M. Rogers, *Diffusion of Innovations*, Fifth Edition 2003, Free Press, New York. It's thorough, readable, and strongly recommended for anyone who's serious about making change.

Endnotes

¹ Everett M. Rogers, *Diffusion of Innovations*, Fifth Edition 2003, Free Press, New York, p221

² Quoted in Purcell, P. (2004) A quick mod takes gamers beyond their doom, *Sydney Morning Herald*, 23 August

³ Soumerai, S.B. et al (1998) Effect of Local Medical Opinion Leaders on Quality of Care for Acute Myocardial Infarction, A randomized controlled trial, *Journal of the American Medical Association* Vol 279, pp1358-1363

⁴ Hirst, E. (1989) Reaching for 100 percent participation in a utility conservation programme The Hood River project, *Energy Policy* Vol 17(2) pp155-164

⁵ Kelly, J.A. et al (1997) Randomised, controlled, community-level HIV-prevention intervention for sexual-risk behaviour amongst homosexual men in US cities, *The Lancet* Vol 350, 9090; *Health Module* p1500

⁶ Rogers op. cit. p322

⁷ See Derek Sivers' entertaining Youtube video on the subject of first followers. It's a delightful demonstration of diffusion in action: <http://www.youtube.com/watch?v=fW8amMCVAJQ>

⁸ Moore, Geoffrey, A. (1999) *Marketing and Selling High-Tech Products to Mainstream Customers*, Revised edition, HarperCollins, New York

⁹ Rogers op. cit. p282

¹⁰ *ibid.* p281

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