

# Increasing Contact Paths Leads to a Reduction in Availability

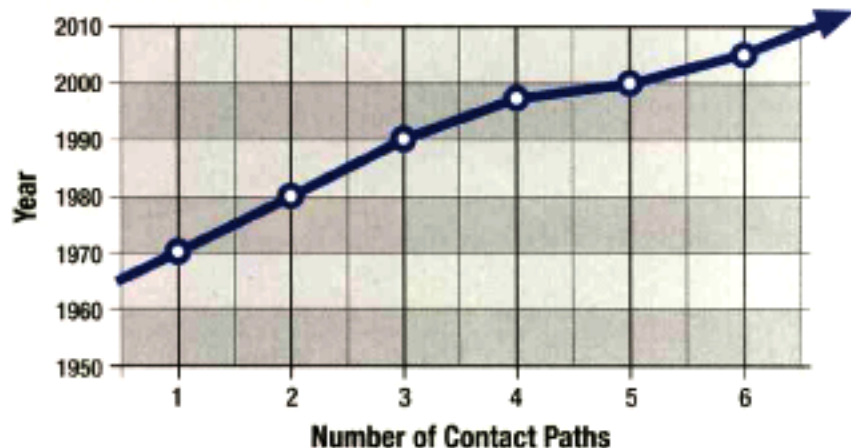
By MARC LADIN

As the U.S. has moved down the technology adoption curb, Americans have continued to adopt new and diverse means of communications at an accelerating pace. After the advent and widespread dispersion of the telephone at the turn of the 20th century, the reachability of U.S. citizens has moved down an accelerating growth curve as we have exponentially increased the number and diversity of our available communication paths. But are we more available?

Observing the progression of contact paths for an individual shows as the number increases, our availability decreases. However, it's only natural to think the more devices I have, the more ways someone can get a hold of me. The reality, unfortunately, is exactly the opposite. Simply put, the more devices and avenues for which we have available to be contacted, the more complexity we have added into the communication process, thus leading to a decreased probability of picking the right contact path at any given time.

For example, if I tell you that I am thinking of a whole number between one and two, and ask you to guess what that number is, how well would you do? With two possibilities, you have a 50 percent chance of guessing correctly. Now take this example a little further. If I tell you to guess a number between one and five, I have reduced the probability that you will guess correctly to only 20 percent. Therefore, it goes to argue that you are two and a half times more likely to guess the correct number when there are only

GROWTH IN NUMBER OF CONTACT PATHS PER INDIVIDUAL - U.S.



Source: 3i (National Notification Network)

two choices, then when there are five. That is a big difference.

Now let's apply this example to contact path theory. If I asked you to list your 10 best friends' names on a piece of paper, you could probably come up with a list easily. Now, without the aid of any device, directory, or cell phone address book, if I asked you to name as many ways as you can to get in contact with each person, you would likely come up with one, and possibly even two ways to get in touch with them.

It is very likely that you will have either a favorite phone number or an e-mail address, or maybe even an instant messaging address that you know by heart that you will be able to come up with for each friend. And for some of the names, you might just draw a blank stare because you have never actually had to remember their phone number because it is stored in your cell phone, or their e-mail address which is already in your e-mail address book.

On average, you would likely be able to come up with one contact path for each individual on your list of 10. But what about the other five ways that each of your 10 "best friends" created for you to get a hold of them – their pager, office number, home number, car phone, instant messaging address, work e-mail address, personal e-mail address, Blackberry, fax number, etc.?

While all of these devices increases the number of available contact paths that an

individual may have, they did nothing to improve your ability to get a hold of them because we are "capacity constrained" to remember more than the one most commonly used communication path that we are accustomed to contacting them on. In fact, the addition of more contact paths per individual had the exact opposite effect, making it considerably harder to get a hold of your "best friends." I will explain how in a minute.

Your response to the previous test might be something along the following lines:

"I don't need to remember all of those contact paths because they are stored in my \_\_\_\_\_ (insert one of the following: paper address book, PC address book, cell phone contact list, instant message buddy list, etc.)"

This idea was labeled transactive memory and developed by David Wegner, a psychologist at the University of Virginia. Transactive Memory states we store a lot of information outside of our heads. We don't remember the five different ways that we can contact our 10 best friends, but instead we remember where to find that information – in our personal address books, our cell phones, etc.

What happens to our personal contact books when time is compressed? For example, take the room that you are sitting in. Imagine that the room you are in has just lost power – no lights, no computer, and your cell phone is nowhere in sight. Now let's try the following test: you have

10 minutes to contact your 10 best friends, and tell them that they all need to call you back in exactly 35 minutes.

Do you think you would be able to remember how to get a hold of all 10 friends? And if you could remember, do you think it would be possible to reach all of them in 10 minutes, and relay the message to call you back? Does this sound a little far-fetched?

In reality, this is exactly the situation faced by individuals in a crisis situation. In such situations, individuals experience a sense of time compression and a physical reduction in their motor skills. During these events an individual's memory recall and brain functions are impaired by the crisis nature of the situation. If you took the test above, you probably experienced some of these exact same feelings.

In fact, according to author David Grossman, everyone should practice dialing 9-1-1 for this very reason, because many people experience situations where, in an emergency, they pick up the phone and cannot perform the most basic of functions. With heart rates soaring and motor coordination deteriorating, people dial 4-1-1 and not 9-1-1 because that's the only number they remember. Or people may forget to press "send" on their cell phone, or they simply cannot pick out the individual numbers at all.

## PROBABILITY OF SUCCESSFUL COMMUNICATION

Individual Number of Contact Paths	Without an Automated Notification System*1	With an Automated Notification System*2	% Improvement in Successful Communication Completion Rate
1	50%	50%	0%
2	25%	75%	200%
3	17%	83%	400%
4	13%	88%	600%
5	10%	90%	800%
6	8%	92%	1000%
7	7%	93%	1200%
8	6%	94%	1400%

\*1 The probability of reaching an individual recipient on a single contact path at any point in time is 50%. In a crisis, with reduced response time and increased stress, the likelihood of knowing, on average, more than 1 contact path per individual is nil. The probability of reaching that individual therefore = 50% / # of contact paths

\*2 Using an automated notification system, you are able to quickly eliminate all unavailable contact paths, until you get to at least one available contact path, at which time your probability of success is 50%. This success probability =  $(\# \text{contact paths} / 50\%) - 1) / (\# \text{contact paths} / 50\%)$

Source: 3n (National Notification Network)

"You must rehearse it," said Grossman, "because only if you have rehearsed it will it be there."

During a crisis situation it becomes more difficult to communicate, and the increased availability of contact paths does absolutely nothing to improve that

communication. In fact, in a crisis situation, the number of contact paths an individual has actually creates a tremendous communication roadblock.

The history of human communication has its roots in pre-historic times. After the first caveman spoke to the second caveman, human communication was launched. Since then we have developed an ever-accelerating number of ways to communicate that are more creative, immediate and effective. As we have unleashed this great tidal wave of interaction, it is important to understand the fundamentals behind our communication activities.

Understanding contact path complexity, and how it plays a role in our routine, and more importantly, non-routine or emergency communications, will help us to avoid the pitfalls we have created with all of our interactivity. Using an automated notification system eliminates these shortcomings through its ability to communicate with all individual contact paths. The resultant improvement in communication success rates is mathematically enormous.



Marc Ladin is vice president of marketing at 3n (National Notification Network). Ladin has more than 10 years of software, hardware, and services marketing experience.

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