# INFORMATION ACROBAT
## *Climbing the Ladder of Abstraction*

By Richard Freishtat and Adam Leipzig

## COMMUNICATION FAIL

The CEO steps onto the stage. It's an all-hands meeting of a billion-dollar company -- there are 3,000 people in the auditorium, and another 5,000 remoting in. The company's gone through a difficult transition, and the CEO is here to talk about the upcoming reorganization.

*"The re-org is going to be great for us," the CEO says. "It's going to bring us back to our core values."*

For the next half hour, the CEO describes the core values and large vision for the company.

**This presentation was not received well.**

Here's another true story. At a large software company that builds customer management systems, the IT team developed a way to tweak existing code to achieve 35% better efficiency in operations. This resulted in a significant surge in their division's profits, and the head of IT was invited to present at the next board meeting.

In the boardroom, the head of IT detailed how they had adjusted Python script, developed a new algorithm, and even wrote out some of their signature achievements on the whiteboard. Until the board president called a halt and asked everyone to move on with the agenda.

**Another presentation down in flames.**

## THE LADDER OF ABSTRACTION

In the first instance, when the CEO was talking about a re-org, the audience didn't really care about a large vision. They wanted to know if some of them were going to be fired, and what would happen next. In the second instance, the board wanted to know about sales and growth; they didn't really care about how IT had tweaked Python. They probably thought Python was a snake.

These two examples, drawn (with a few changed details) from clients with whom we have worked, illustrate a fundamental problem of communication: if you're not talking at the right level of abstraction for your audience, you're not communicating well.
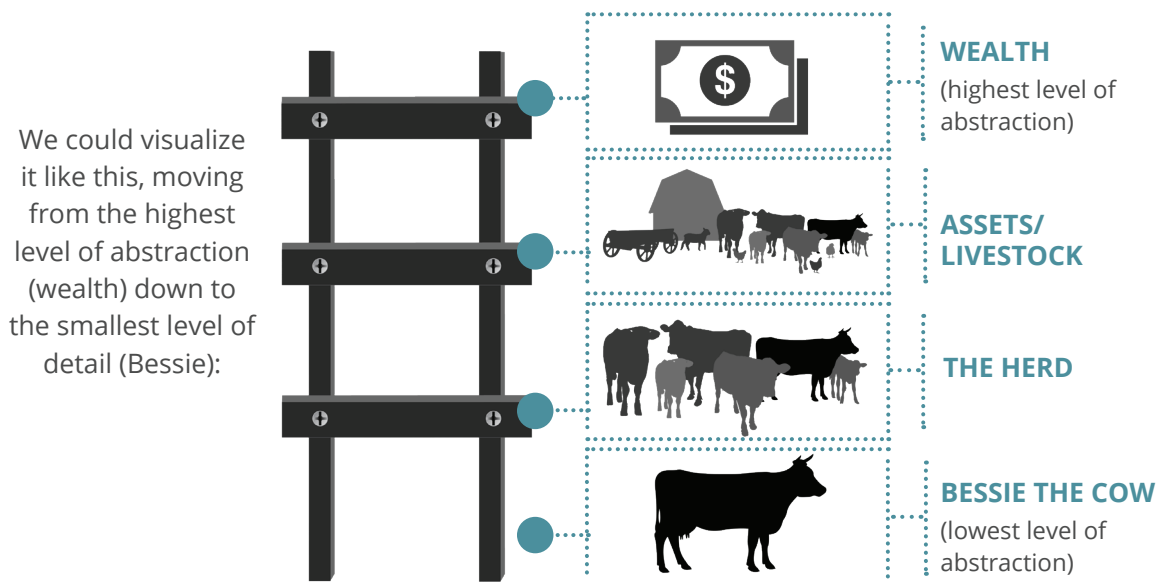
Fortunately, there is a solution to this problem, a solution that is easy to adopt and will give you the tools you need to talk with any audience at any time at just the right level of detail. A solution that will turn you into an information acrobat, able to adjust nimbly to whatever comes your way.

The solution is called the Ladder of Abstraction, and it was developed in 1939 by semanticist S. I. Hayakawa. Hayakawa's parents had emigrated from Japan to Canada, and Hayakawa himself moved from Canada to the United States after graduate school. His diverse cultural background led him to be fascinated by how people create meaning out of language, and he had a significant insight: we absorb information at different levels of abstraction all at the same time.

For example, if you're a CTO and a new software vendor comes in to pitch you their latest product, they might tell you about all the great things their software does. You'll hear them -- but simultaneously your mind will be working on other levels of detail: **How will their software integrate with the software you currently use? What about the extra training burden on your IT team? How much will it cost? What's the new company's track-record?**

Thus, you might blurt out in the middle of the vender's high-level pitch, **"We don't want to be early adopters. We can't afford any downtime so we need software that's road tested!"** Your mental move to a different level of abstraction might throw the vendor off their game. Or, if they follow the Ladder of Abstraction, they may be able to give you an appropriate response.

Hayakawa used the prosaic example of Bessie the Cow by way of illustration. There is a cow; let's call her Bessie. Bessie is part of a herd of cows. The herd is part of the farm's livestock. The livestock represent the farm's assets. And, those assets equate to the wealth of the farm and farmer.



We could visualize it like this, moving from the highest level of abstraction (wealth) down to the smallest level of detail (Bessie):

**WEALTH**
(highest level of abstraction)

**ASSETS/ LIVESTOCK**

**THE HERD**

**BESSIE THE COW**
(lowest level of abstraction)

Hayakawa's original academic model of the Ladder of Abstraction contained 8 levels or rungs. While many topics can be sorted to this many levels of abstraction, from a communication standpoint (particularly oral communication), we recommend initially designing your thoughts with 4 levels, giving you the ability to flex up to 5 and down to 3.
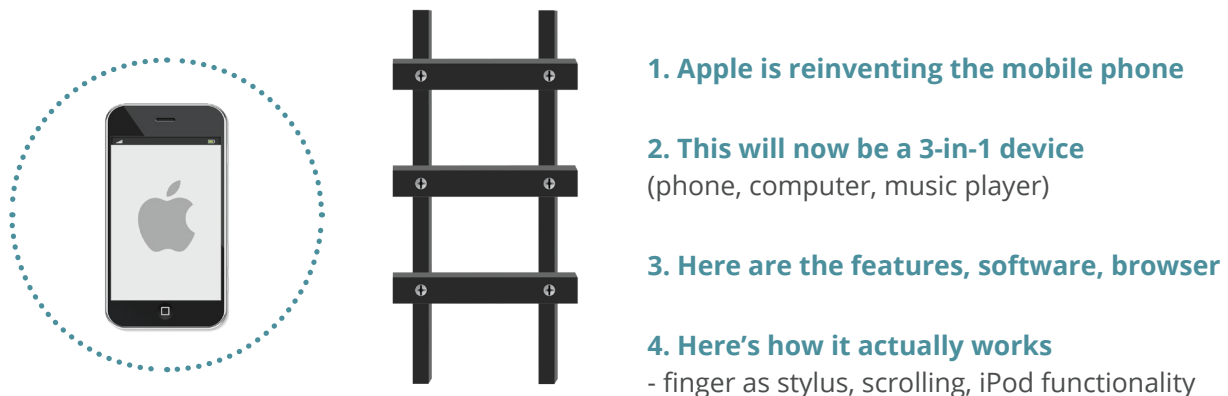
Why? When you are speaking to an audience (and not reading from a script), it is relatively easy to keep in mind ~4 levels or key points. Just as important, it is reasonable to ask an audience to follow ~4 levels of abstraction without getting confused. Remember, simplicity is one key to effective communication and being memorable.

## IN PRACTICE

Let's look at a real example of how this works.

When Steve Jobs and Apple released the first iPhone, Jobs delivered a 98-minute presentation showcasing the device and its features. There were a number of points he needed to make, including the software used, functionality, how it would disrupt the digital world, and an example of how it actually worked in practice. While these capture all of the most relevant points, the list does not show how they are interconnected, or provide an organizational strategy for the presentation. However, if we can organize the list across a Ladder of Abstraction, the ability to speak across the points becomes clear as a result of their relationship to one another. And, we can begin to formulate the optimal path to move through the points that will resonate best with the audience.

So, what did Jobs do in this incredibly high-stakes communication situation? The points were organized in such a way that he simply walked down the Ladder of Abstraction. Here was his Ladder and eventually the flow of his presentation where he walked the audience from the top to the bottom - expanding and expounding on each level as needed:

**1. Apple is reinventing the mobile phone**

**2. This will now be a 3-in-1 device**
(phone, computer, music player)

**3. Here are the features, software, browser**

**4. Here's how it actually works**
- finger as stylus, scrolling, iPod functionality

## HOW YOU BUILD YOUR LADDER

**But how did Jobs, or how would anyone, move from a list of points to an organized Ladder of Abstraction?** To illustrate this, let's turn to an example from another industry, Starbucks.

**STEP 1: MAKE A LIBRARY**
Before starting to formulate your message and what you will actually say, first create a library of content which contains all of the possible points you could make about the topic on which you are going to speak. This does not mean you'll actually speak to every point, but it is crucial to have all of your options made explicit.

Here's a list of many attributes of Starbucks:

| | | |
|---|---|---|
| **Coffee** | **Sandwiches** | **A place to meet** |
| **Affordable** | **Gathering space** | **Connecting people** |
| **It's everywhere** | **Tables and chairs** | **Bathrooms** |
| **Free wifi** | **Friendly staff** | **Different kinds of drinks** |
| **Consistent experience** | **Bringing people together** | **Tea and non-caffeine options** |
| **Breakfast** | | |

**STEP 2: FILL THE LADDER**
Once you have your library of content, you are ready to start building your ladder.

**30k**

**20k**

**10k**

**0**
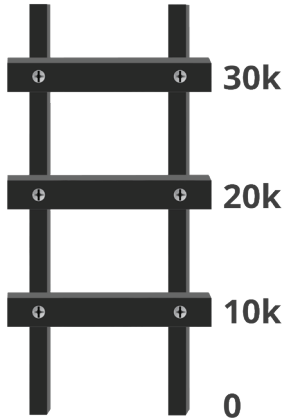
First, select from that Library of Content one point that you are certain will resonate and be something the audience must hear.

Then, as best as you can, place that point (keywords are best - no sentences needed) at the level of abstraction on the Ladder that seems most appropriate.

*It is often easiest to select something that is obviously at the very top or very bottom of the Ladder.*

Here's how you might fill in the Starbucks Ladder with just a few keywords:
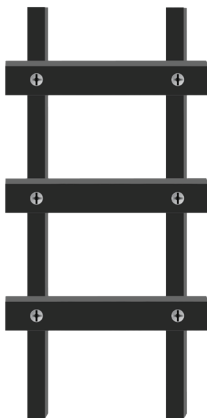
**Connecting people & bringing them together**

**It's everywhere**

**Friendly staff, tables and chairs**

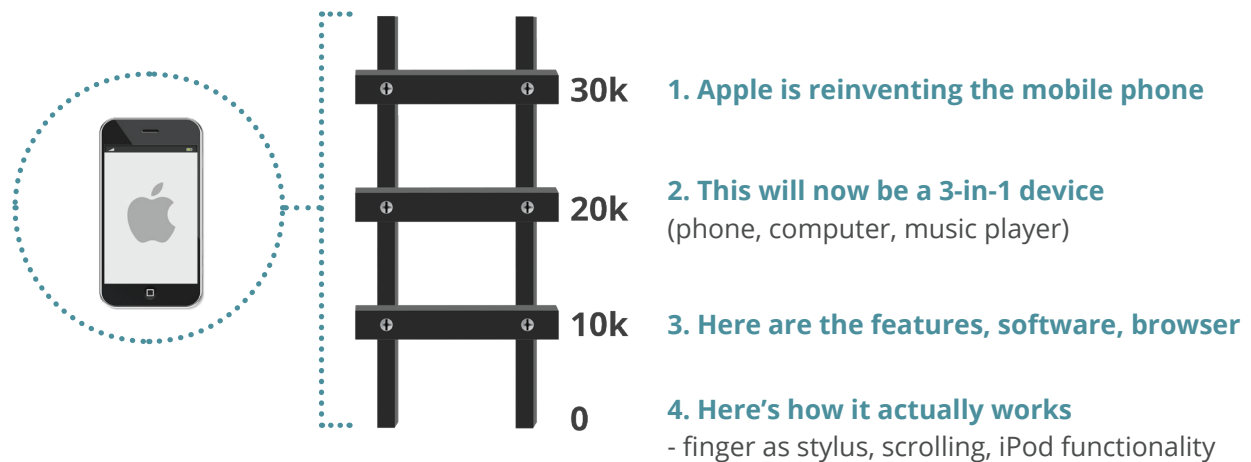**Coffee, bathrooms, free wifi**

## HOW STEVE DID IT

Let's go back to Steve Jobs introducing the iPhone. He felt the most important message he wanted to convey was that "Apple is reinventing the mobile phone." That is a highly abstract notion and gets placed at the top rung of the ladder. In order to then fill in the rung below, how we move down the ladder, requires answering the question: **How does this work?**

By answering that question you necessarily become slightly more concrete - one rung down the Ladder. How does Apple reinventing the mobile phone work? It works by turning the single function mobile phone into a 3-in-1 device which includes functions of a phone, computer, and music player. How does it work as a 3-in-1 device? It works through the integration of new product features, software, and a browser. How do the new product features, software, and browser work? They work like this - Jobs actually pulled out an iPhone and started using it as a concrete demonstration.

But what would have happened if he started populating his Ladder from the bottom, wanting to ensure he had the opportunity to actually show people how the new iPhone works? All one needs to do is answer this second question: **Why is this important?**

In answering that question, you necessarily express a slightly more abstract idea about the topic. **Why is the actual user experience important with this mobile phone?** It is important because it demonstrates how Apple is harnessing new developments in features, software, and browser capabilities. **Why are the new features, software, and browser capabilities important?** They are important because they enable a formerly single function mobile device to now be a 3-in-1 device. **Why is a 3-in-1 device so important?** It is important because it means Apple is reinventing the mobile phone.

Here is what Steve Jobs' iPhone Ladder looked like, based on his actual presentation:

**30k**   **1. Apple is reinventing the mobile phone**

**20k**   **2. This will now be a 3-in-1 device**
(phone, computer, music player)

**10k**   **3. Here are the features, software, browser**

**0**   **4. Here's how it actually works**
- finger as stylus, scrolling, iPod functionality

## DEVELOP YOUR ORGANIZATIONAL STRATEGY

Once your ladder is constructed, it is not prescriptive in how you deliver your message. It's a flexible organizational strategy tool. While Jobs decided to walk from the top to the bottom of his Ladder through his iPhone presentation, ending the talk by pulling out an actual iPhone to show how it works, you have the freedom to start anywhere and move through levels as needed for your specific audience.

**How might you decide where to start and where to go from there?** This is the strategy component. From your Ladder, identify which piece of content will make your audience most receptive to your message, and lead with that. From there, move them through the Ladder so you conclude with the piece of content you most want them to remember (an audience will remember the last thing you say). You could even come full circle and end at the level of the Ladder from where you began.

Regardless of the order of content, the Ladder gives you a way to talk across levels and move your audience along with you. Your ability to do this stems from the two questions: **"How does this work?" and "Why is this important?"** Simply put, these questions allow you to understand and express the relationship between the various levels of abstraction, regardless of how you move through your Ladder.

**Jobs could have just as easily started at the bottom and worked his way to the top:** Look at how this new iPhone works >>That's important because it utilizes these new features, software, and browser we've developed >> That's important because it transforms a single function mobile phone into a 3-in-1 device >>That's important because it means Apple is reinventing the mobile phone.

Or, Jobs could have started in the middle of the ladder and moved from there: We have created a 3-in-1 mobile device >> That's important because Apple is reinventing the mobile phone >> That's made possible by the new features, software and browser we've developed >> That enables the user to use the device in these various ways.

## KEEP IT SIMPLE AND TRUST YOURSELF - YOU'RE THE EXPERT

Remember to keep your Ladder to keywords only. Once you have built it and developed your organizational strategy around it, it can and should serve as your mental presentation roadmap. By limiting it to keywords, remembering those keywords across ~4 levels of abstraction is relatively easy for the brain to do (even in high stress/pressure situations), and can serve as stepping stones across the message delivery.

This is critically important because your Ladder enables you to deliver your message in varying lengths: from a concise elevator pitch to a long presentation like Jobs' lengthy presentation on the iPhone. Regardless of the time you have to deliver the message, the Ladder remains constant. You are (or should be) the expert on whatever it is you are speaking about. The keywords on the Ladder rungs should prompt your language and thoughts, and this can flex from uber-brevity to an expansive talk. The longer you have to talk, the more information you can give across levels of the Ladder, or give more time to certain levels and less to others, while still addressing each. As the expert, you can talk about these things all day if you needed to.

## THE "JERK" IN THE BACK OF THE ROOM MAY NOT BE A "JERK"

There is one other important use of the Ladder of Abstraction, and that is addressing disruptive or derailing questions from your audience. The mistake most communicators make when receiving a question from their audience is to assume it is meant to be disruptive or derailing - there's always a "jerk" in the back of the room, right? Not necessarily. In fact, most times, when you are interrupted with a question that feels disruptive or derailing, it is really that the specific audience member's interests lay at a different level of abstraction than where you are currently speaking.

Let's try an example. You are presenting to the C-Suite a way for the company to advance its core mission via a new HR recruitment strategy, and are speaking in depth about overarching strategy and mission. Then the CFO interrupts, asking, **"How long will this take? How much will this cost? What is the expected financial return on our time, money, and resource investments?"** This can feel disruptive and derailing. But, in reality, the CFO is most concerned about a different level of abstraction that you are not yet addressing (or had not planned to). In some instances, you may have just not gotten there yet, and will be able to answer those questions through the presentation. In other instances, these questions may be related to the topic but not be in the core Ladder you developed and planned to present.

**Do not worry!** Remember back to when you first created your Ladder and that Library of Content? You bring that Library of Content with you into every communication situation. It is like the hard drive of backup data and information you keep stored at the different levels of abstraction just to the outside of the core Ladder you've built. Therefore, when the CFO asks these questions while you're at the top of the Ladder, you can immediately identify that they are simply asking questions at the ground-level, focused on the most concrete details about this new HR strategy. Now you go to that level, step out of your Ladder to the hard drive of content you carry with you as the expert, answer the questions, and

work your way back to where you were - addressing the questions directly, productively, and deftly transitioning back to the point you were making and central message you were conveying.

In this example with the C-Suite and CFO questions, you might hear the CFO express their concerns and proceed to answer them like this: **"This will be an 18 month project. It will require three pilot phases before full company rollout. I will serve as project lead and will require three new headcount at $150K/annually and dedicated time from four existing HR professionals on staff. After that period, and once fully implemented, the organization will see a 40% reduction in turnover equating to $1.5M in annual recruitment savings across money spend and personnel time."**

Then, you would be able to move back up your Ladder because you can speak to the relationship between levels: **"And, those annual recruitment savings and reduction in turnover will be important because they mean we will maintain the continuity and strength of our project teams, which enables us to more quickly put products in the market and grow our market share, which means we can better advance our mission to improve the lives and well-being of communities through our products."**

## THE DO-OVER

The Ladder of Abstraction provides a course-corrective, and also a way to look back and see how a presentation could have gone better. Sometimes, armed with this new insight, you will have the chance to change contexts and make the presentation again to produce a different and better outcome.

**Let's go back to our opening examples.**

Remember the CEO talking to the all-hands meeting about a company-wide reorganization? What could have been different to make it go better? If the CEO had spent some time building a Library of Content and organizing it into the Ladder, there would have been a collection of ground-level details: **Will people lose their jobs? Will departments be made redundant? Will there be changes that affect employees' daily lives?**

Then, with growing awareness of the 8,000 people in the audience, the CEO would have started somewhere else: **"I know you have heard about the re-org. And you are certainly wondering what it will mean for you, as well as for our company. I have called this meeting today to discuss it all openly with you and tell you everything -- from the smallest details to the biggest picture. After my talk, I'll spend as long as we need together answering questions, and I have also briefed all department heads so they can continue the dialogue."**

*This presentation, although it may deliver some bad news for some people, would nonetheless be greeted with respect and understanding.*

How about the head of IT presenting to the board? In this case, the Ladder would have brought focus to higher-rung issues. The head of IT might have started with a context-setting statement -- **"Thank you so much for inviting me here to discuss the improvements our team made in customer service software"** -- and then move immediately to how the software improvements have driven profit, efficiency, and market share results, all the while giving prominent credit to the IT team and a management approach that allows for experimentation. Python would not have slithered onto the table.

## YOU ARE AN INFORMATION ACROBAT

To be an effective communicator - whether it's to inform, influence, persuade, or inspire - you must climb up and down the Ladder of Abstraction like an acrobat. While different audiences need different mixes of both concrete details and abstract principles, all audiences need some mix across the ladder.

To make a persuasive argument and establish a powerful rhythm, balance your message between the two. After you've developed your Ladder for a given topic, practice moving up and down it to see which flow works best and where you may need to focus the most time. An audience of senior executives will likely be influenced by greater focus on the higher rungs of the ladder; a group of technical engineers are more likely to be influenced by the lower rungs, which more immediately affect their daily lives.

The more you work with the Ladder and practice its principles, the more easily and quickly you'll find yourself able to build a Ladder for any communication situation. When done deliberately and with purpose, the Ladder of Abstraction will become the central organizing tool that makes your message relevant and memorable for your audience. *And it will make you an acrobat at effective communication.*

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