

Going Wireless: The Graduate School Walk of Faith

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Passion Talks
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I am a...

- PhD Student in Electrical Engineering @ Stanford, with a focus on wireless hardware design
- Christian and involved in InterVarsity Graduate Christian Fellowship

And...



- I have been known to make analogies relating concepts from engineering with the Christian faith
- Today I will relate wireless radio concepts to the experience of graduate school for the Christian student, in particular the challenges

“Do you have any final tips?”

–A friend starting graduate school this August

The Tougher Stuff

Workload

Coursework
Research
Teaching

- Demanding workload, often surprisingly so
- Often less time for “other”

Relationships

Classmates
Labmates
Advisor

- Self-comparison with peers
- Dealing w/ various types of advising styles & personalities

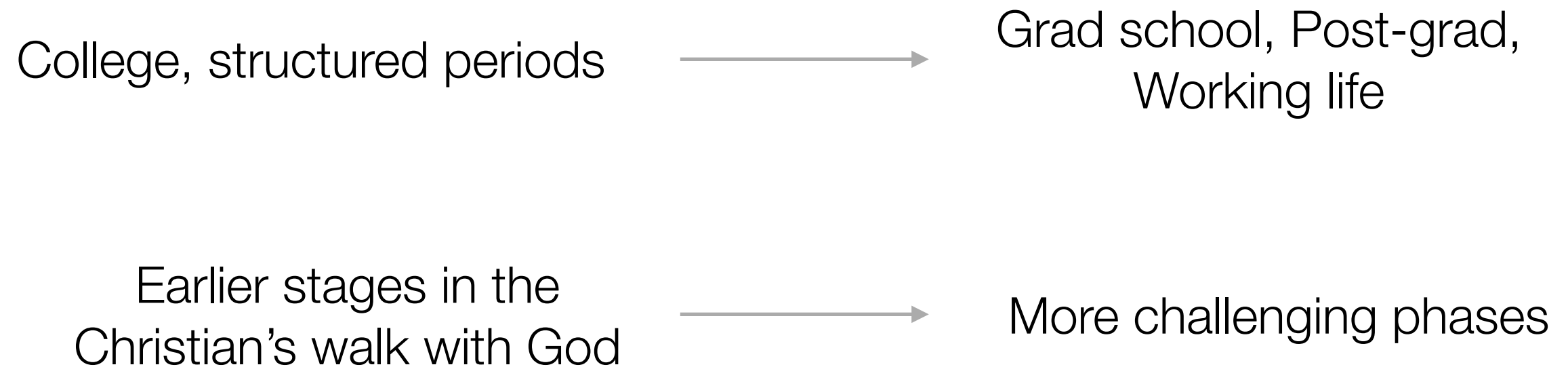
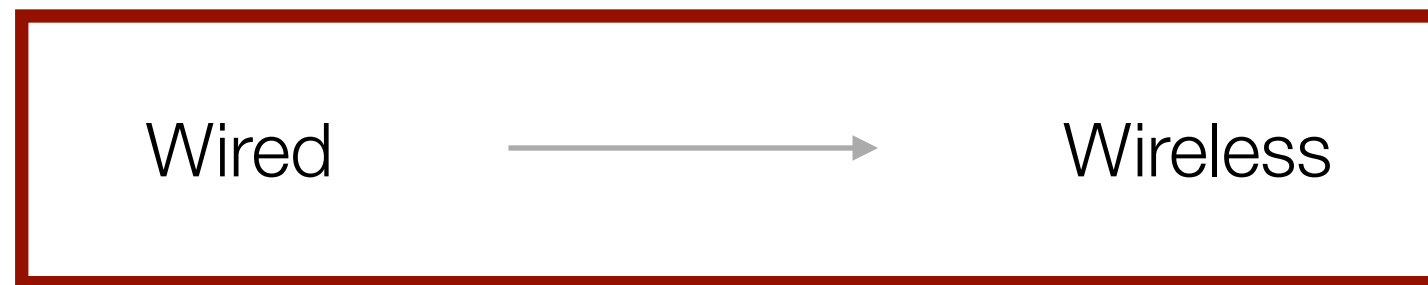
Personal

New environment

- Sense of uprootedness
- Search for a community that fits
- Ambivalence or animosity towards Christian faith

Was coming here the right decision?
Why did God bring me here?
What is He doing with this time?

A Relation



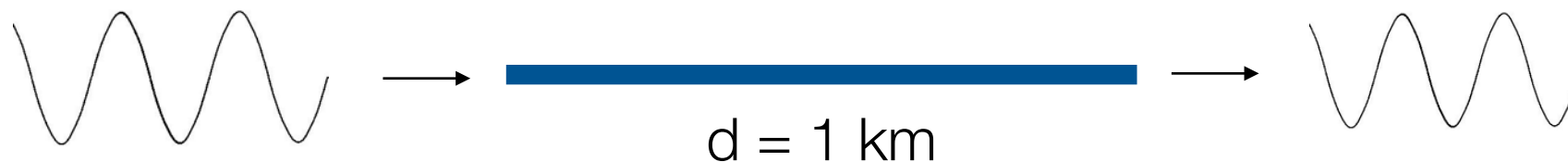
The Wired World

The traditional telephone line

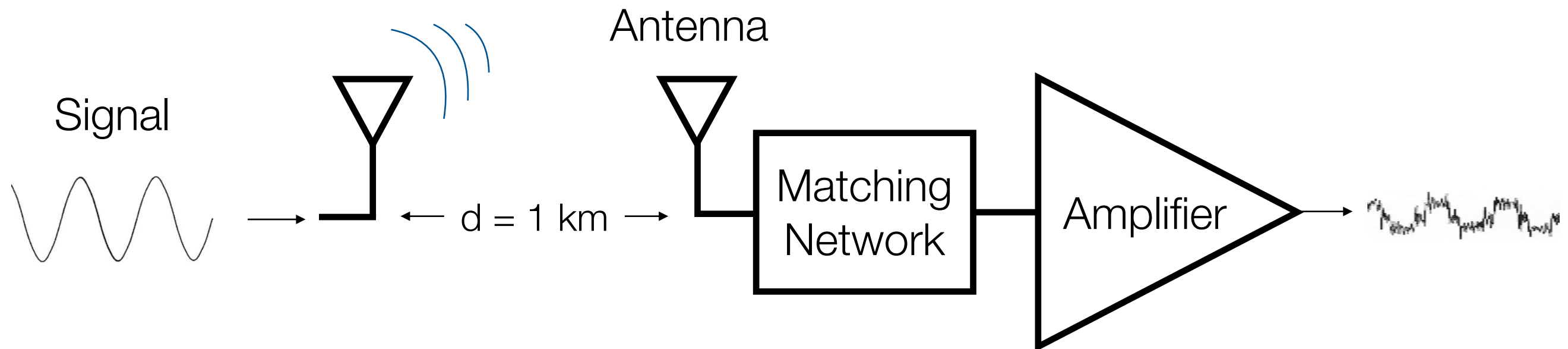


Transmitted Signal

Received Signal

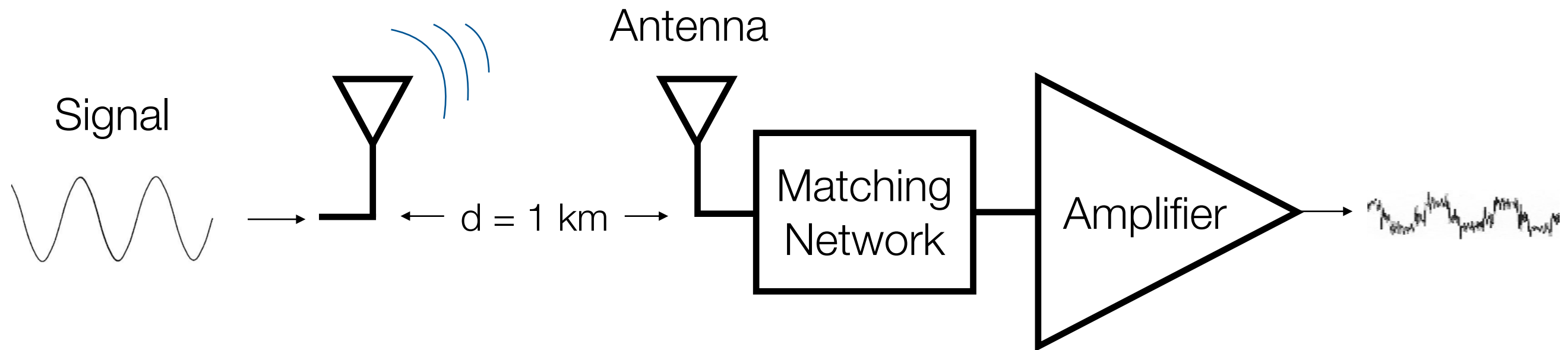


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How do we receive wireless signals *well*?

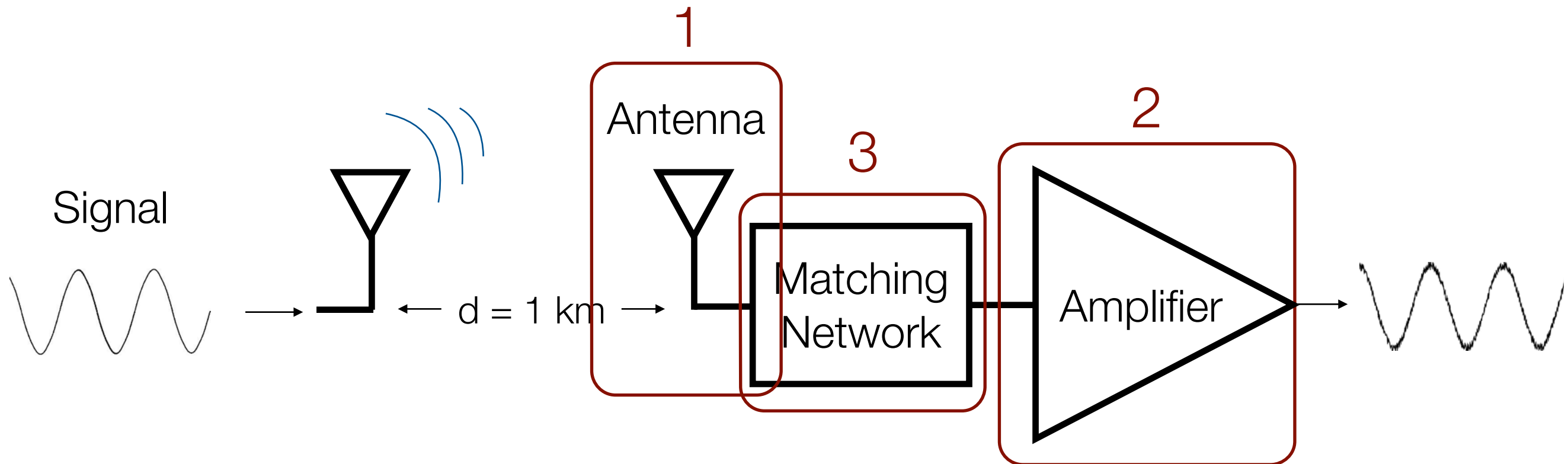
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Engineers like simple metrics:

$$\text{Signal-to-Noise Ratio (SNR)} = \frac{\text{Signal Amplitude} \quad \text{Signal Waveform}}{\text{Noise Amplitude} \quad \text{Noise Waveform}}$$

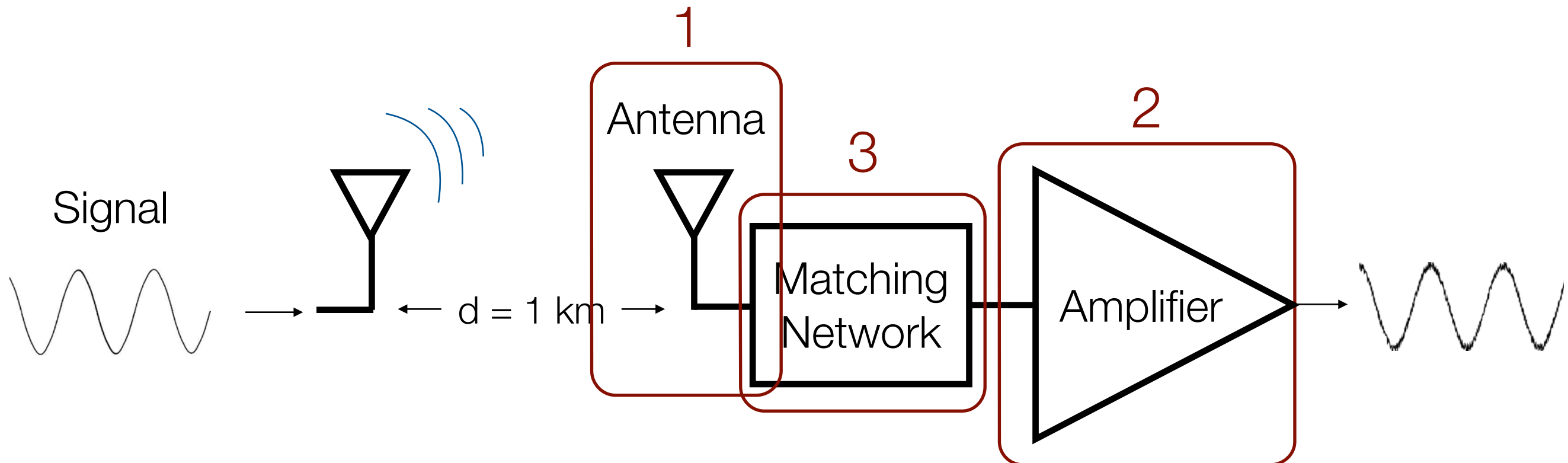
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How do we design for high SNR?

1. A directive antenna
2. Low noise amplification
3. Well-matched power transfer

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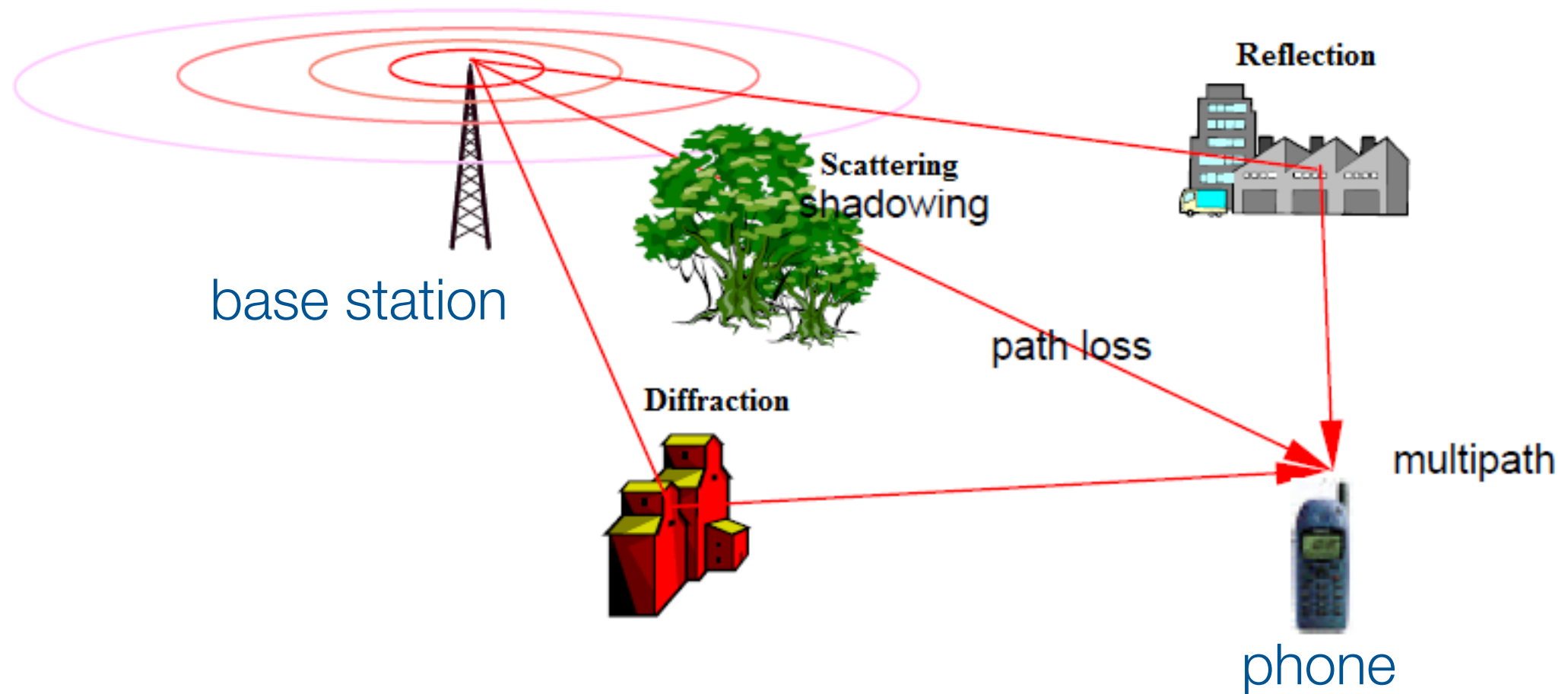


How do we design for high SNR?

1. Attentive and directed listening
2. Minimizing noise, amplifying truth
3. Creating avenues for better “power transfer”

But...

- Some propagation scenarios are just bad



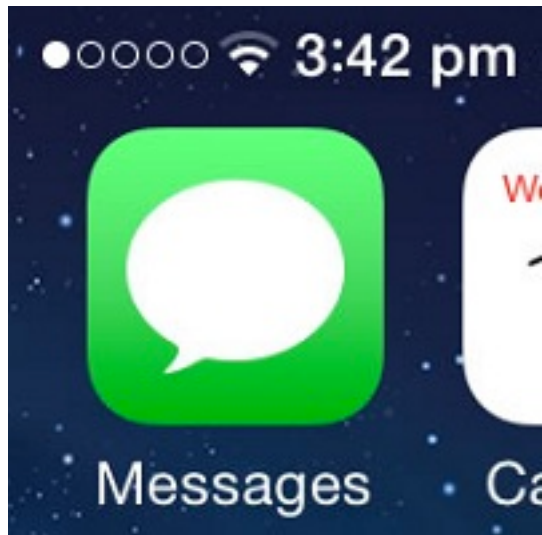
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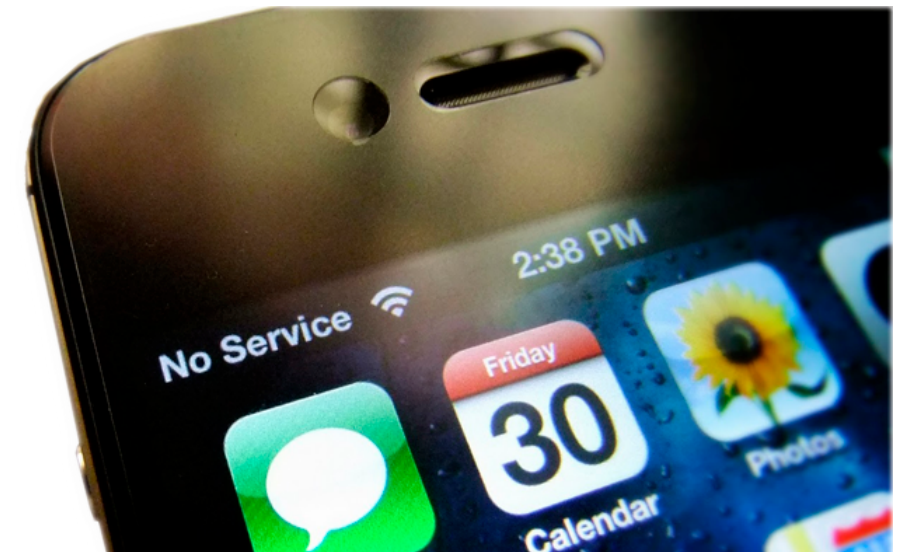
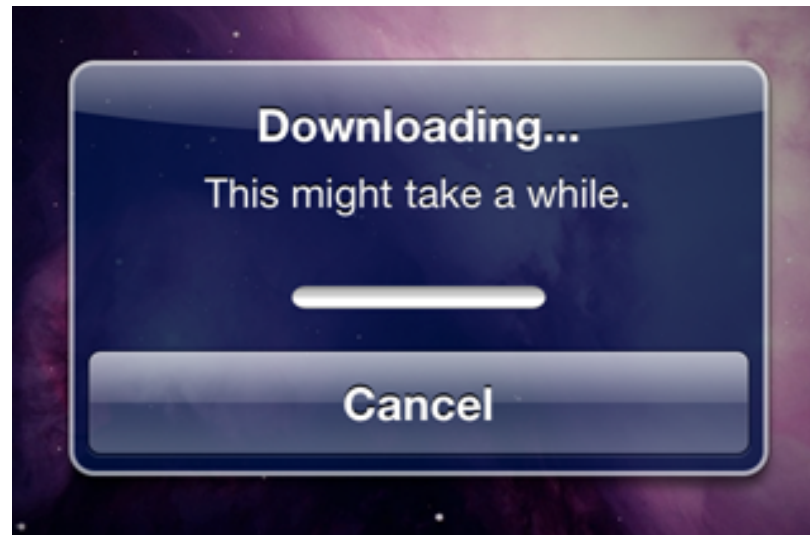


What do we do in tougher faith situations?

What do our phones do?



Waits for stronger signal, or downloads more slowly to maintain low error

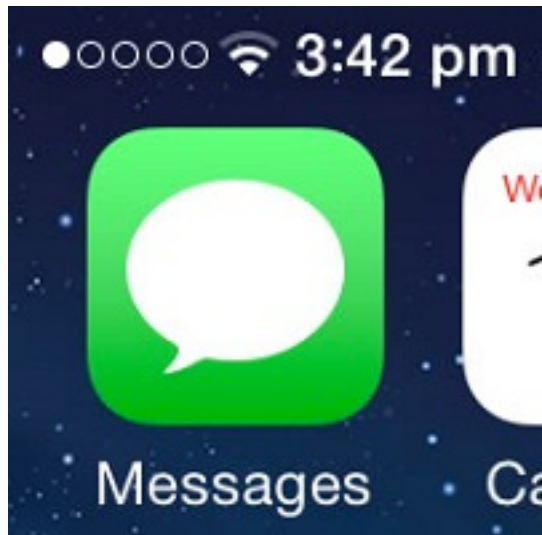


Keeps signaling until it hears a response ("Searching...")

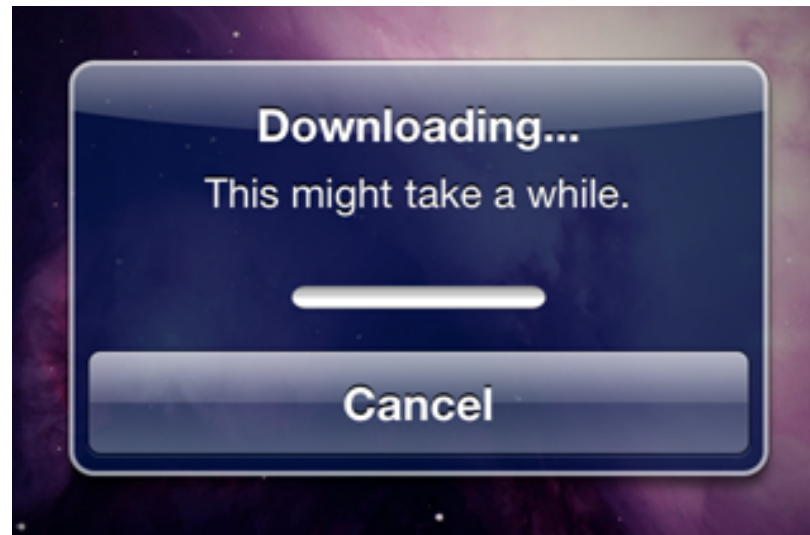
It knows that a base station exists somewhere, even if it can't find it
It expects that the base station has meaningful information to send

So it waits, signals, and listens
And downloads the information as it slowly arrives

What do our phones do?



Waits for stronger signal, or downloads more slowly to maintain low error



Keeps signaling until it hears a response ("Searching...")

I believe God is present, even if I don't feel it strongly at the moment
I believe God has a purpose for placing me here

So I wait, pray, and listen

And see God's purposes revealed slowly with time

Similarly, the psalmist
writes...

“I am still confident of this: I will see the
goodness of the Lord in the land of the living.
Wait for the Lord; be strong and take heart
and wait for the Lord.”
—Psalm 27:13–14

Am I really willing to let God do whatever
it takes to grow me, even if it means
more difficult experiences?

Do I trust He is doing something
meaningful in my life, although I don't
know what that is yet?

Is there beauty in the waiting?

Thanks for your time!