



From One API Deployment to Thousands

The Journey of an InnerSource CI/CD Framework

Roderick Randolph
Arthur Maltson
Capital One

Act 1: The Beginning



Our digital transformation

Before

Waterfall

Change Approval Board (CAB)

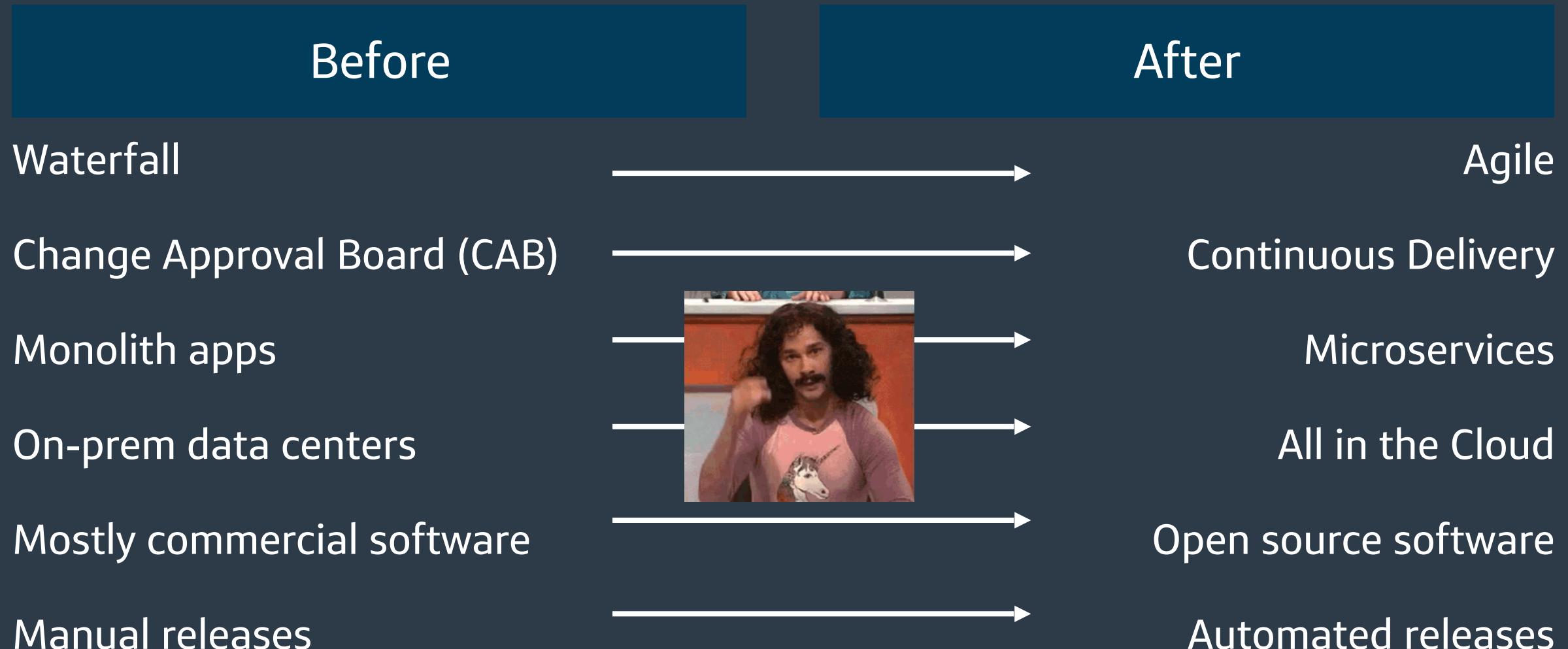
Monolith apps

On-prem data centers

Mostly commercial software

Manual releases

Our digital transformation



But how did we get here?

2015



Across North America in Toronto 🇨🇦...





New to the cloud

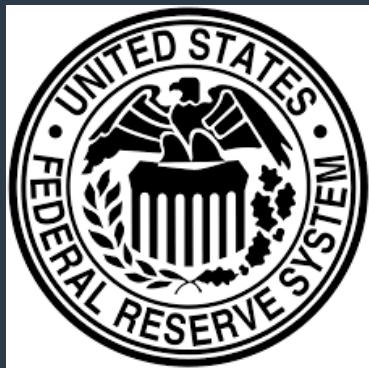
New to devops

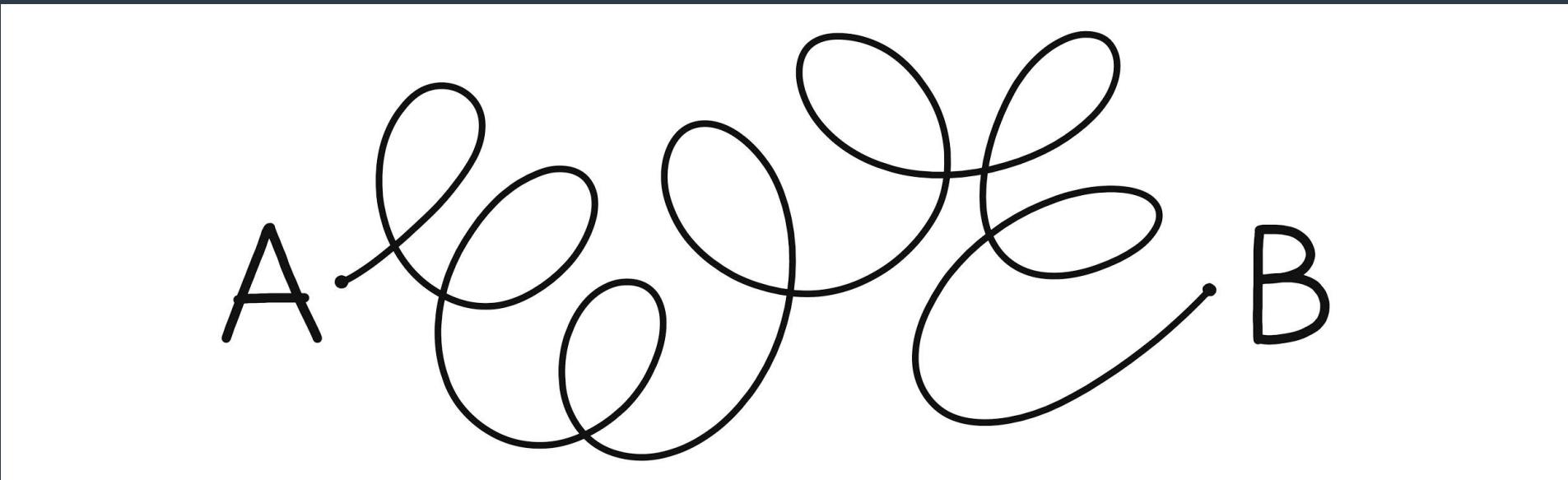
New to containers

New to open source software

New to automation

Psst...we're also a regulated Bank









Our first success!







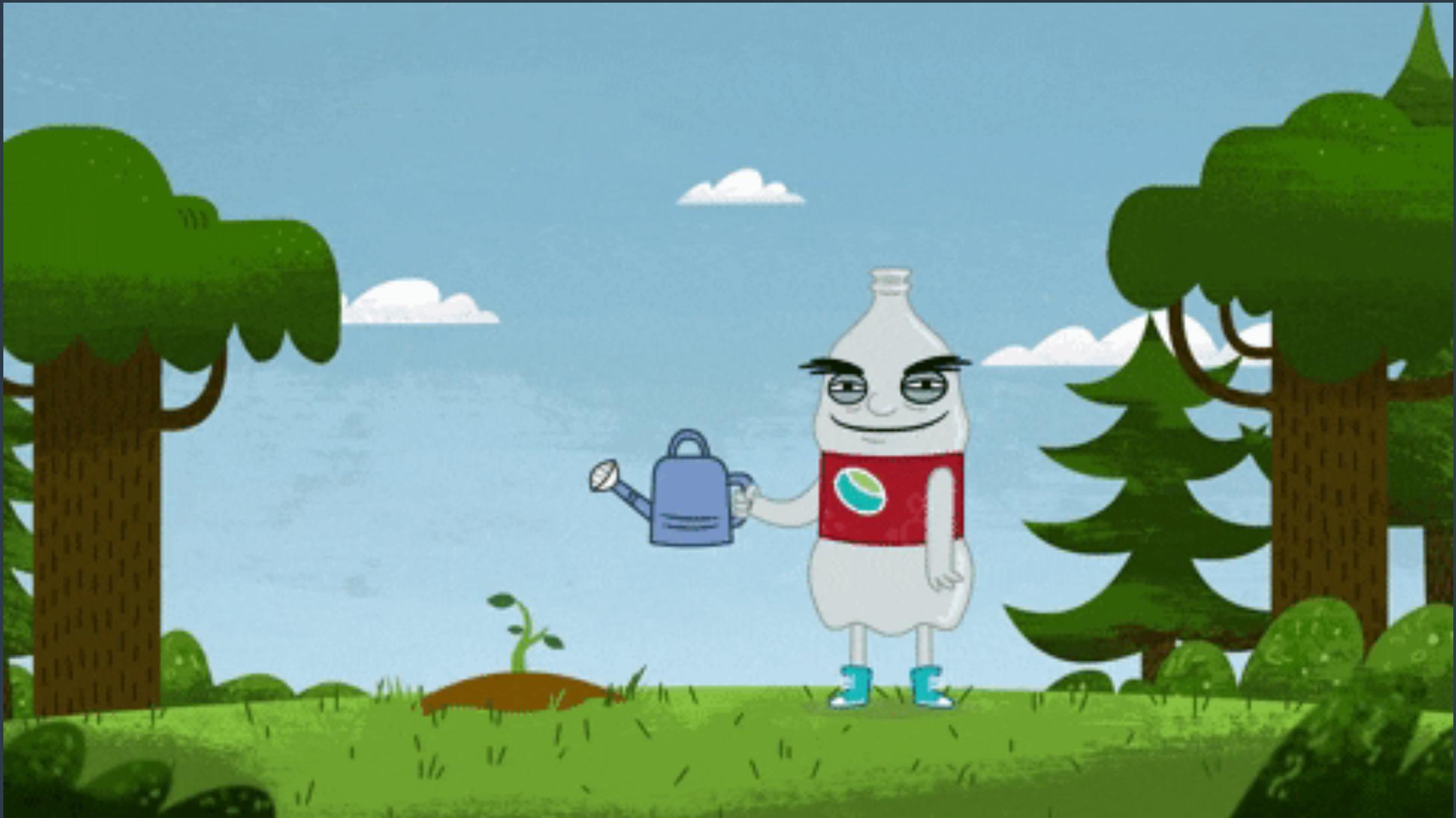
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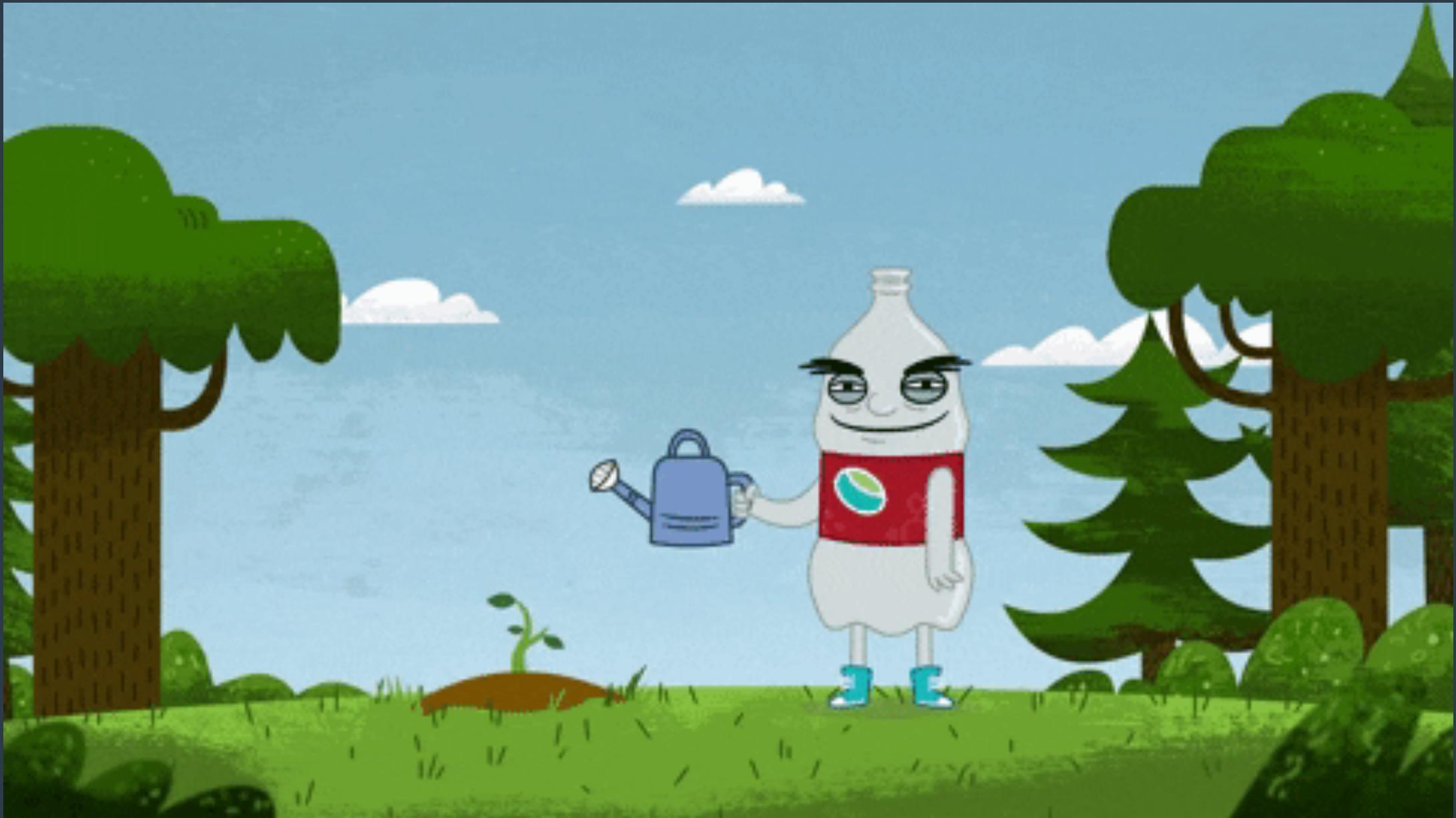


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Act 2: Growing Up

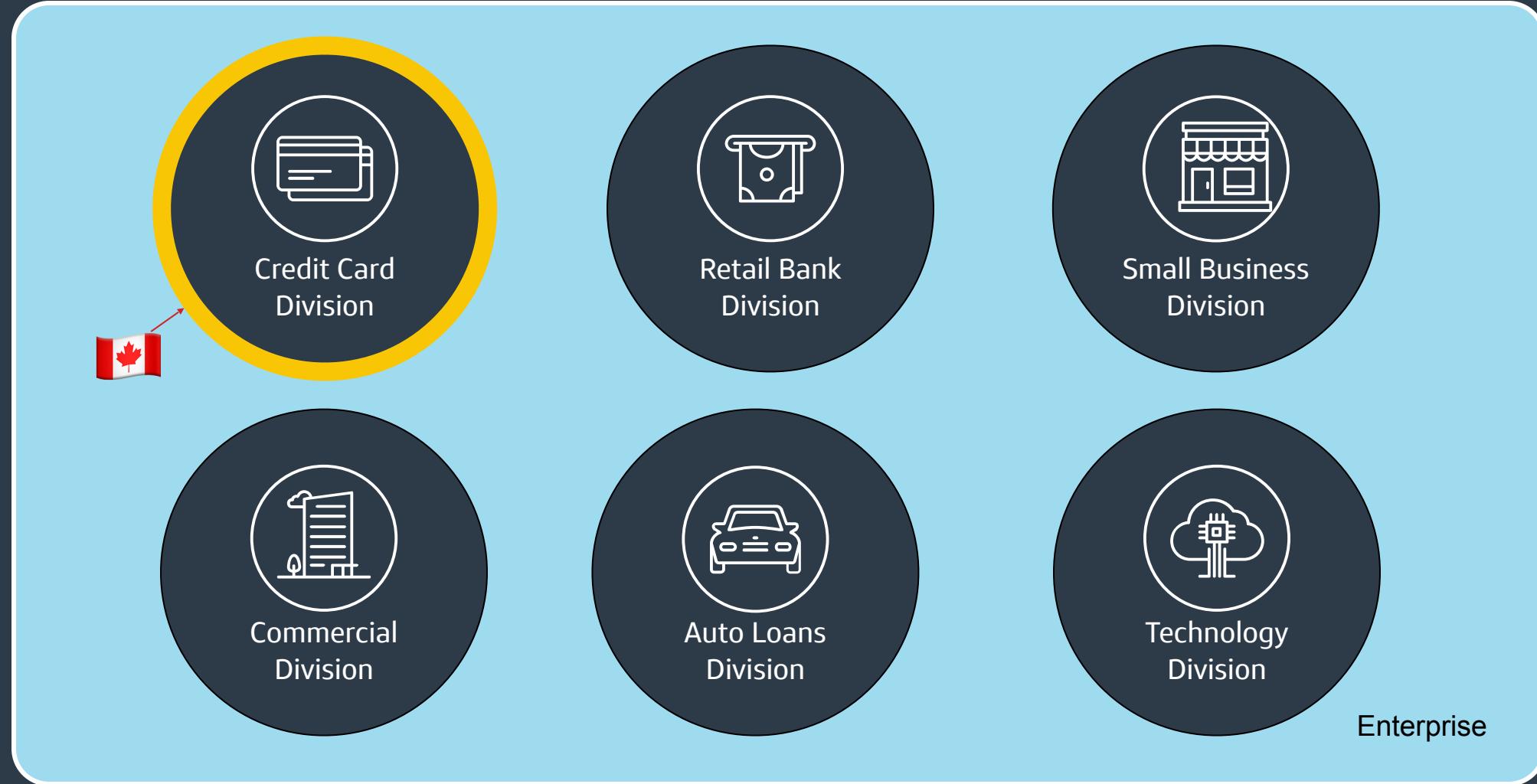












BarnRaising occurs when a community actively decides to come to the same place at the same time to help achieve some specific goal.

Source: <http://meatballwiki.org/wiki/BarnRaising>



Getting Started with InnerSource

Keys to collaboration and productivity
inside your company



Andy Oram

- Code reuse
- Knock down silos between teams
- Boost developer moral
- Improve code quality
- Faster development
- And more

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O'REILLY®

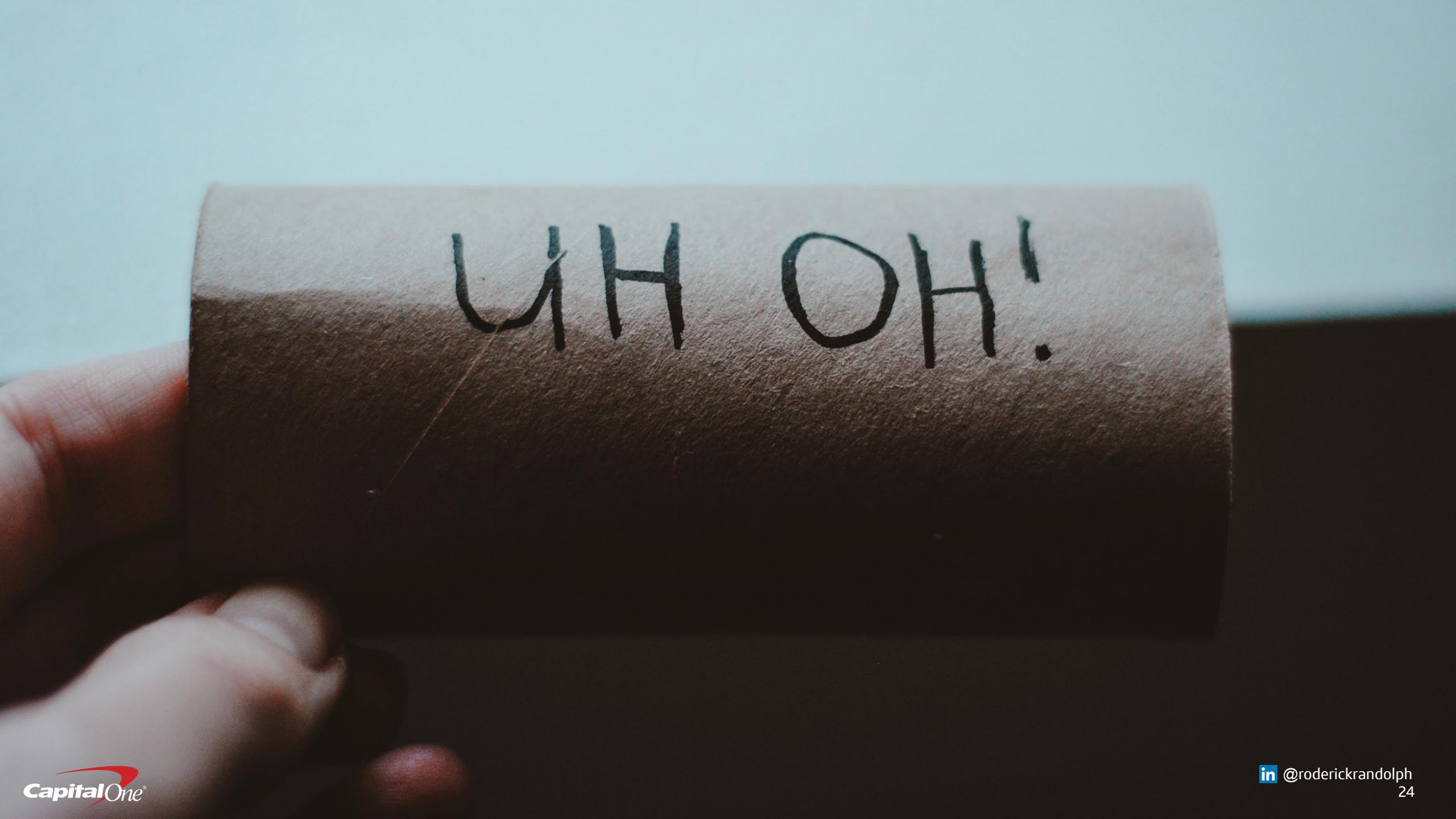
Getting Started with InnerSource

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СИНОН!



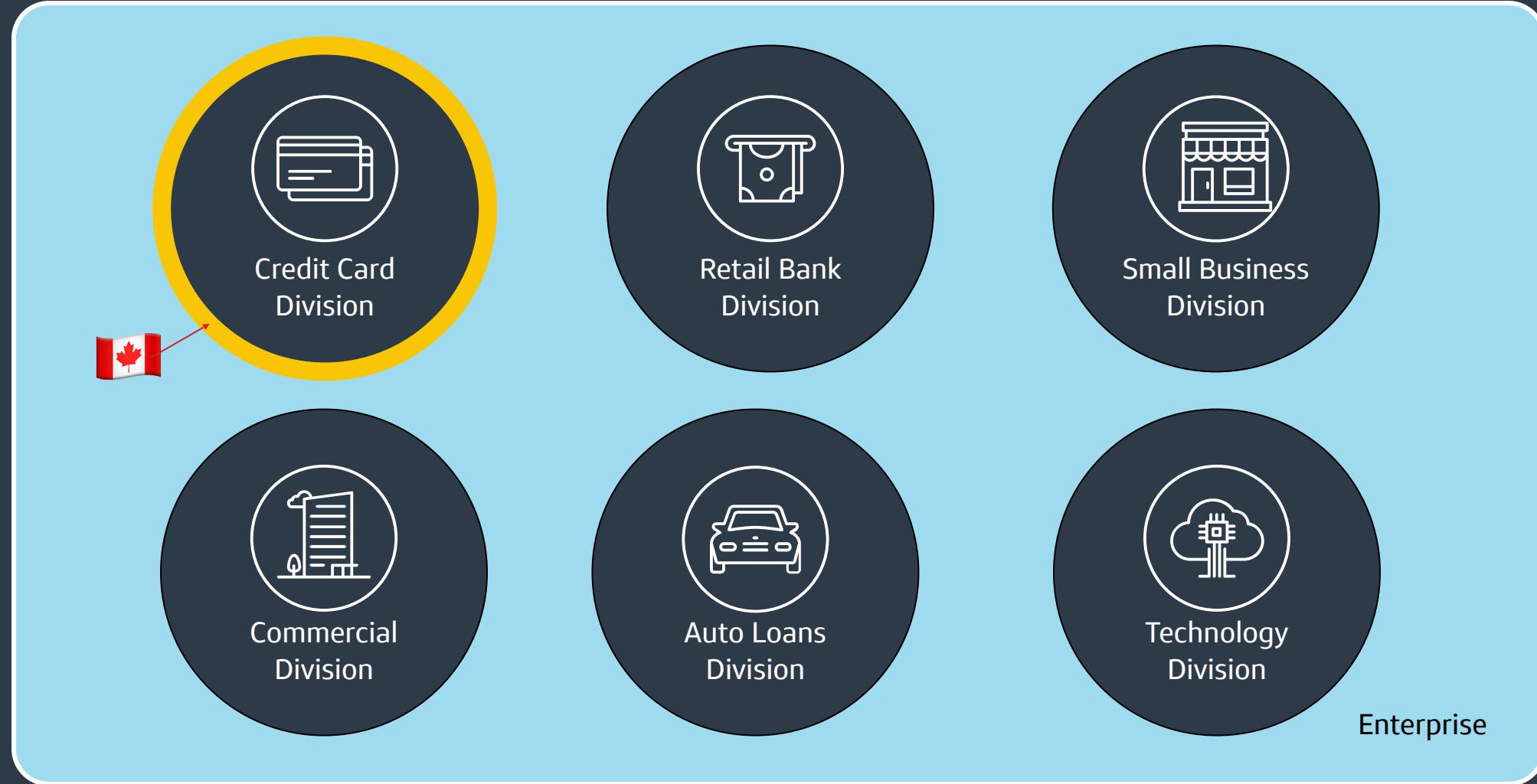
Growing up

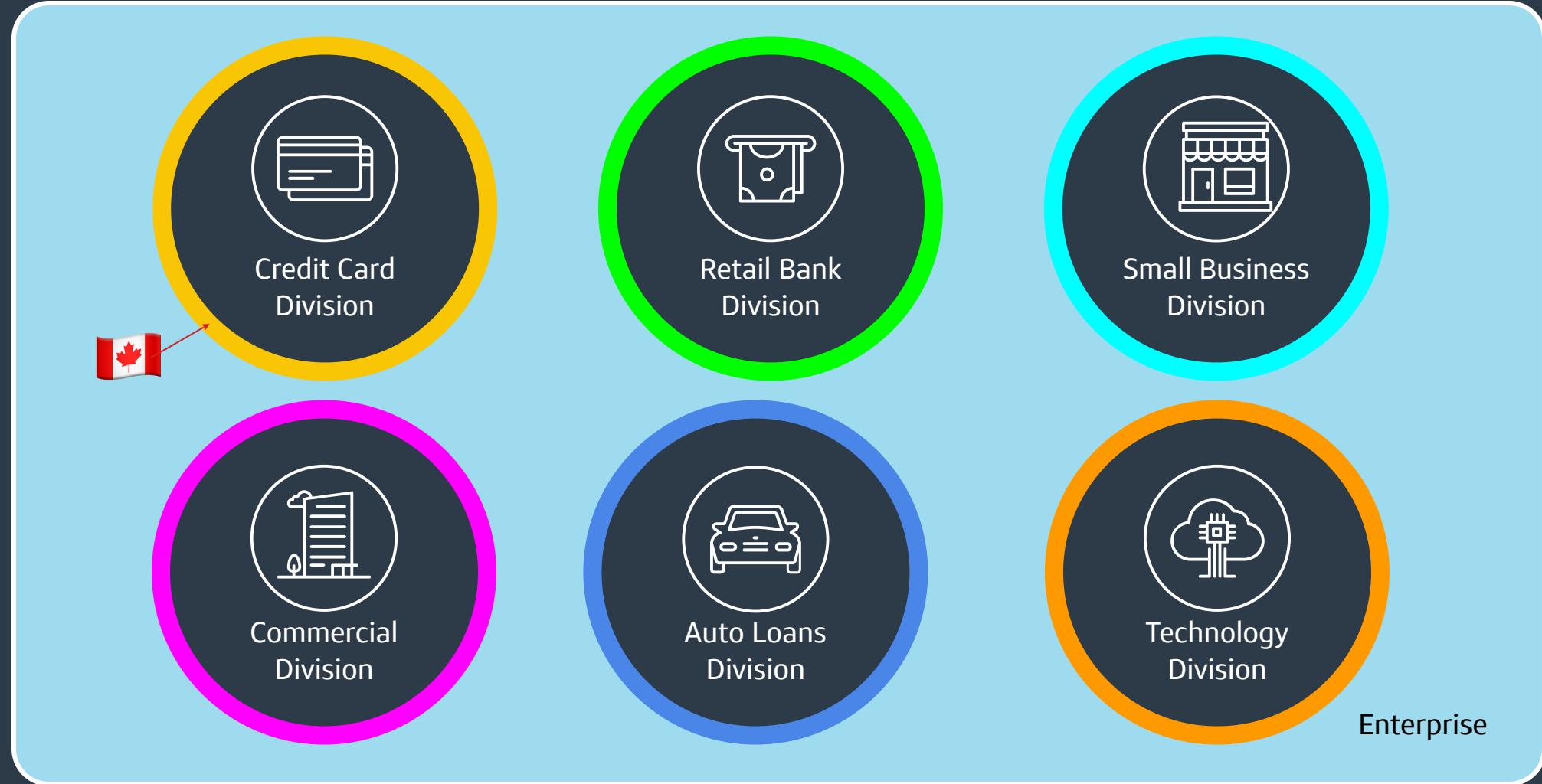
- Bootcamps/training
- Mob programming
- Improve documentation
- Expand office hours support



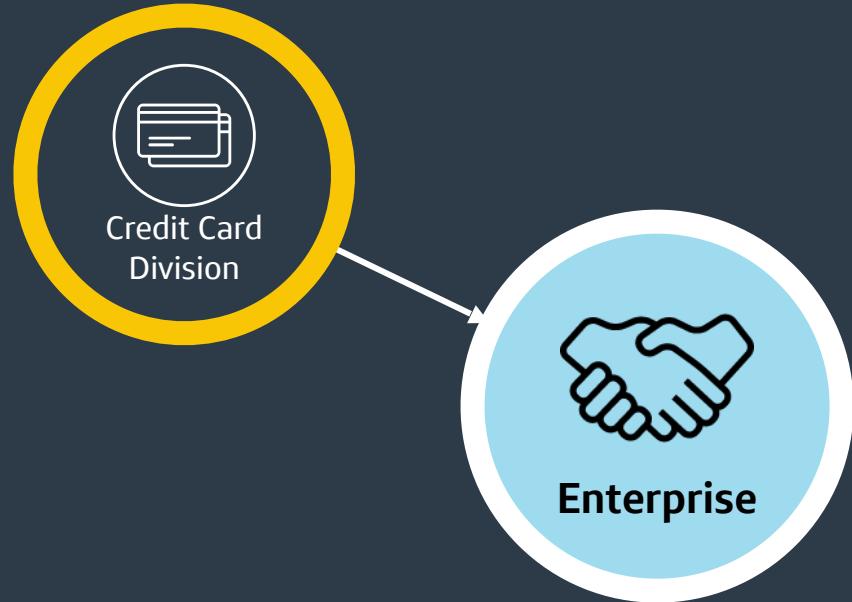
Act 3: Enterprise Scale





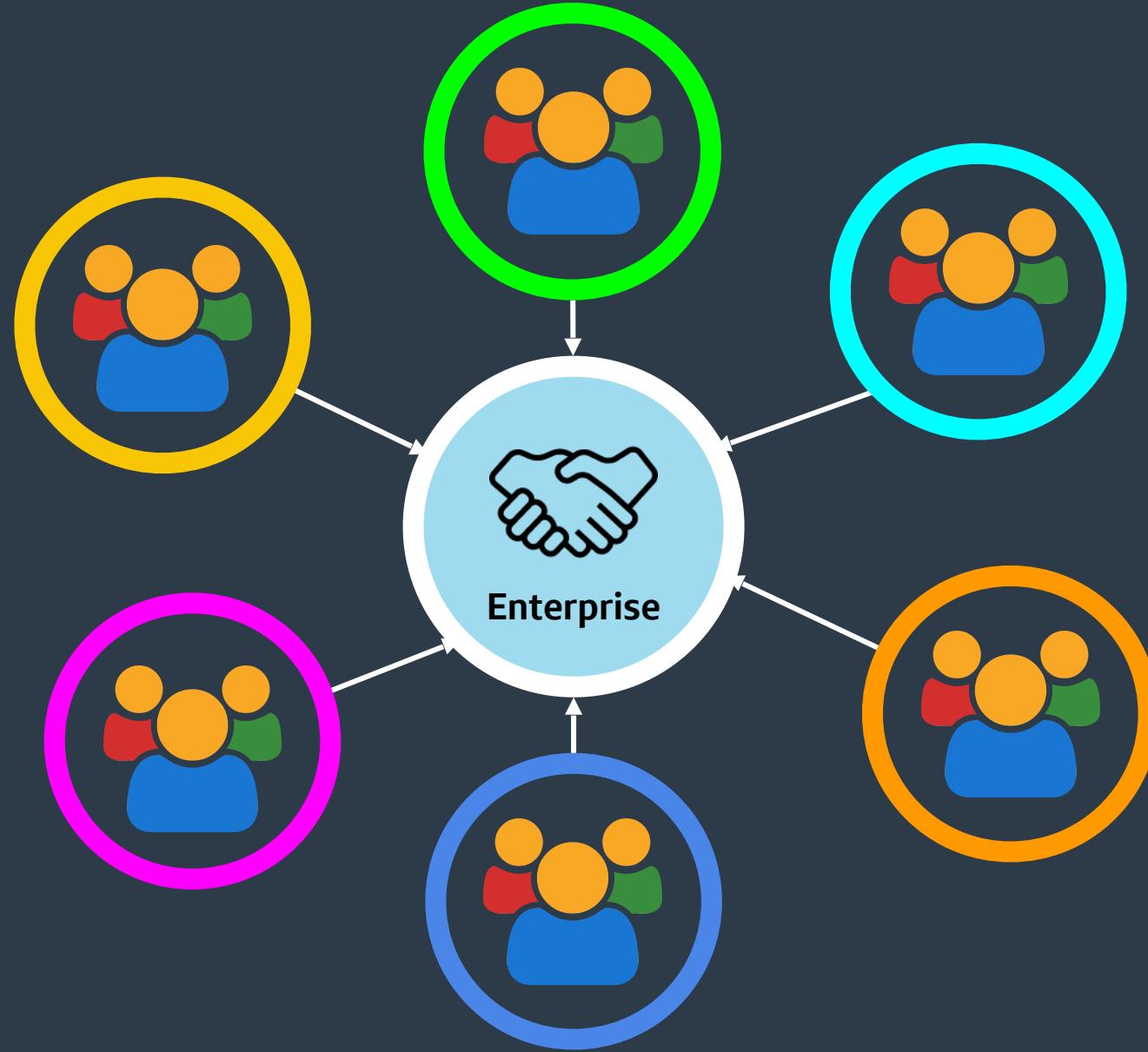








Pipeline Council



Trusted contributors



Where are we today?

Before



Where are we today?

Before



After

Thousands of users

Hundreds of contributors

Thousands of automated builds



Epilogue

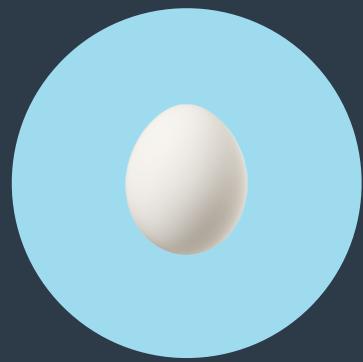


Our Journey



Help With Your Journey

The Beginning Of Your InnerSource Journey



Or Growing Up And Gaining Traction



Or Scaling To The Whole Enterprise



Three Focus Points Of A Successful InnerSource Journey



Three Focus Points Of A Successful InnerSource Journey



Three Focus Points Of A Successful InnerSource Journey



Three Focus Points Of A Successful InnerSource Journey





Product

Scratch Your Own Itch



Define Principles



Rust RFCs - Active RFC List

Many changes, including bug fixes and documentation improvements can be implemented and reviewed via the normal GitHub pull request workflow.

Some changes though are "substantial", and we ask that these be put through a bit of a design process and produce a consensus among the Rust community and the [sub-team](#)s.

The "RFC" (request for comments) process is intended to provide a consistent and controlled path for new features to enter the language and standard libraries, so that all stakeholders can be confident about the direction the language is evolving in.

Don't Lose Sight Of The Details





Product

- Scratch your own itch



- Define principles



- RFCs
- Don't lose sight of the details





White Glove Support



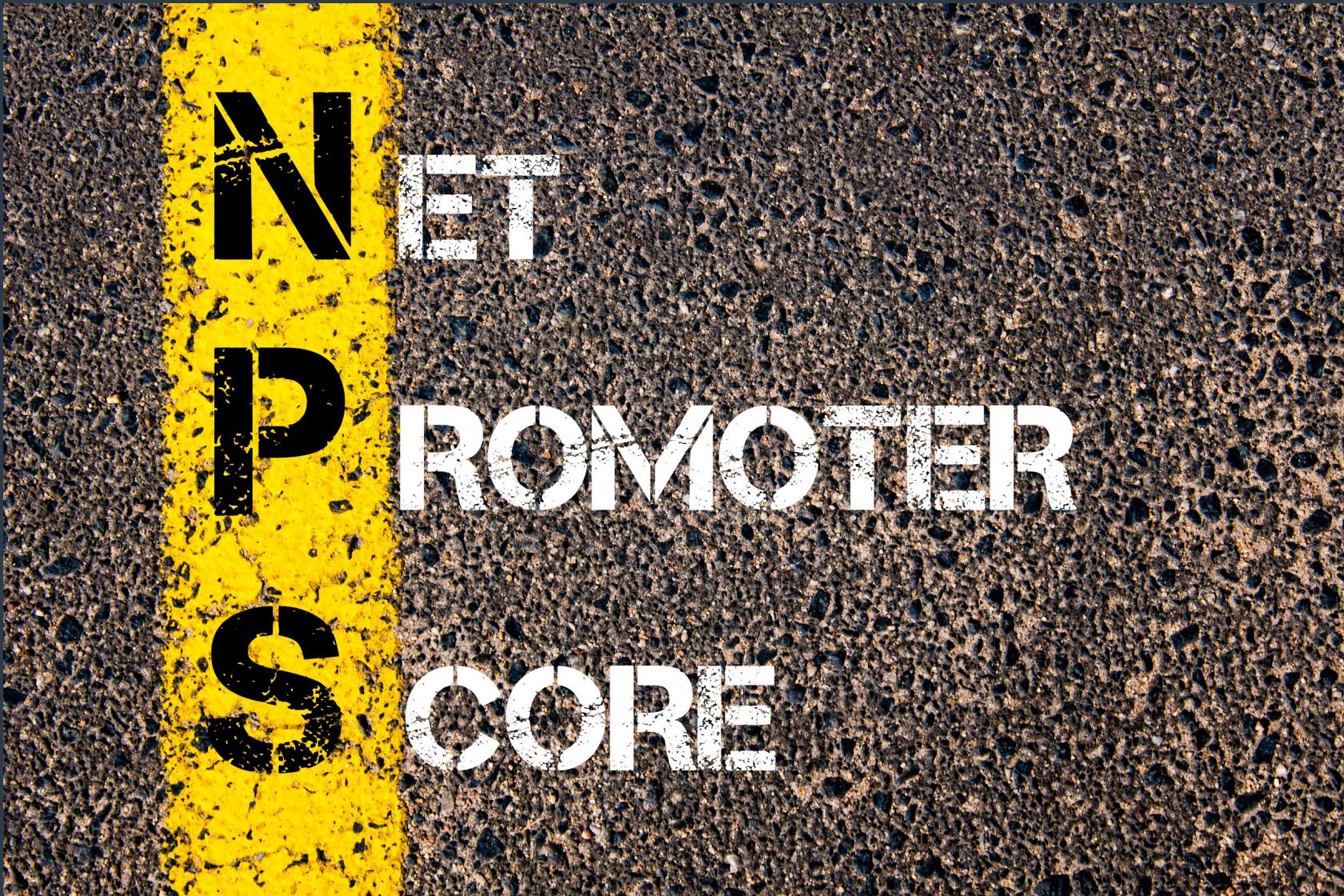
Automate Frequent Touchpoints

HOW LONG CAN YOU WORK ON MAKING A ROUTINE TASK MORE EFFICIENT BEFORE YOU'RE SPENDING MORE TIME THAN YOU SAVE?
(ACROSS FIVE YEARS)

		HOW OFTEN YOU DO THE TASK					
		50/DAY	5/DAY	DAILY	WEEKLY	MONTHLY	YEARLY
HOW MUCH TIME YOU SHAVE OFF	1 SECOND	1 DAY	2 HOURS	30 MINUTES	4 MINUTES	1 MINUTE	5 SECONDS
	5 SECONDS	5 DAYS	12 HOURS	2 HOURS	21 MINUTES	5 MINUTES	25 SECONDS
	30 SECONDS	4 WEEKS	3 DAYS	12 HOURS	2 HOURS	30 MINUTES	2 MINUTES
	1 MINUTE	8 WEEKS	6 DAYS	1 DAY	4 HOURS	1 HOUR	5 MINUTES
	5 MINUTES	9 MONTHS	4 WEEKS	6 DAYS	21 HOURS	5 HOURS	25 MINUTES
	30 MINUTES	6 MONTHS	5 WEEKS	5 DAYS	1 DAY	2 HOURS	
	1 HOUR	10 MONTHS	2 MONTHS	10 DAYS	2 DAYS	5 HOURS	
	6 HOURS			2 MONTHS	2 WEEKS	1 DAY	
	1 DAY				8 WEEKS	5 DAYS	

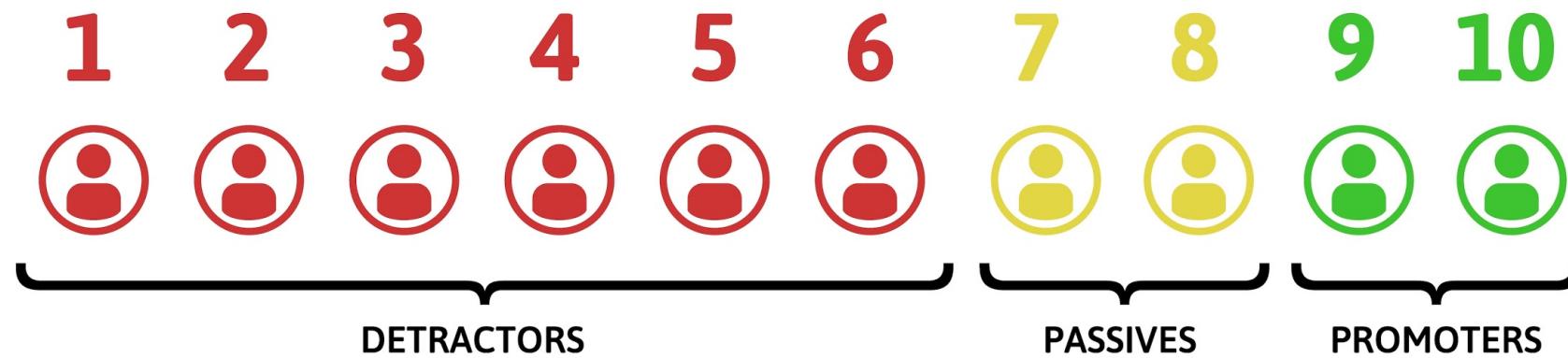
User Happiness

User Happiness



NPS - Net Promoter Score

Net Promoter Score



$$\text{NPS} = \% \text{ PROMOTERS} - \% \text{ DETRACTORS}$$



- White glove support



- Automate frequent touchpoints



- NPS (Net Promoter Score)





Contributor

Transparency



In Person Training And Bootcamps



Trusted Contributor Model



Recognition





Contributor

- Transparency



- In person training and bootcamps



- Trusted contributor model
- Recognition



Three Focus Points Of A Successful InnerSource Journey





Lessons Learned

More documentation



More documentation



Keep up code quality

```
31     def __init__(self, path=None, debug=False):
32         self.file = None
33         self.fingerprints = set()
34         self.logduplicates = True
35         self.debug = debug
36         self.logger = logging.getLogger(__name__)
37         if path:
38             self.file = open(os.path.join(path, "fingerprints.txt"), "w")
39             self.file.seek(0)
40             self.fingerprints.update(fp.strip() for fp in self.file)
41
42     @classmethod
43     def from_settings(cls, settings):
44         debug = settings.getbool("supersecret_debug")
45         return cls(job_dir(settings), debug)
46
47     def request_seen(self, request):
48         fp = self.request_fingerprint(request)
49         if fp in self.fingerprints:
50             return True
51         self.fingerprints.add(fp)
52         if self.file:
53             self.file.write(fp + os.linesep)
54
55     def request_fingerprint(self, request):
56         return request_fingerprint(request)
```



Continue Evolving The Contribution Model





Lessons Learned

- More documentation



- Keep up code quality



- Continue evolving contribution model



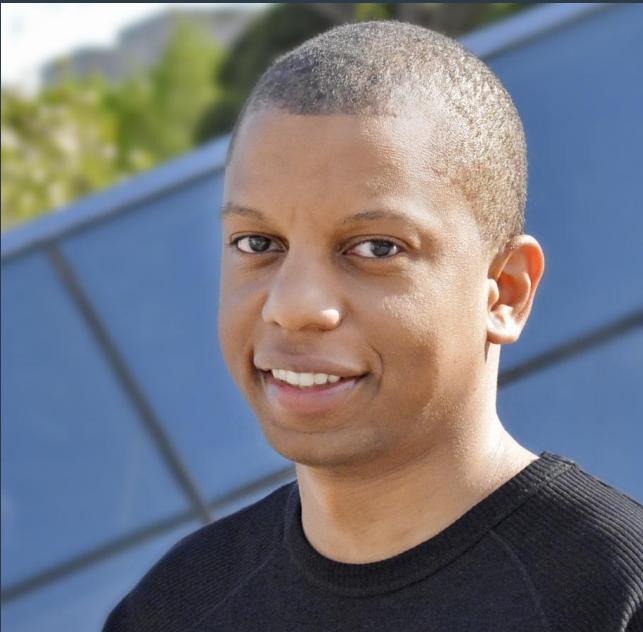
InnerSource Project Success

What we found works for us

	Getting Start 	Growing 	Enterprise Scale 
Product 	Scratching our own itch	Define principles	RFCs Don't lose sight of the details
User 	White glove support	Automate frequent touchpoints	NPS (Net Promoter Score)
Contributor 	Transparency	In person training and bootcamps	Trusted contributor model Recognition
Lessons Learned 	More documentation	Keep up code quality	Continue evolving contribution model



Thank You



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Distinguished Engineer

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maltson.com

Resources

- Slides: <https://bit.ly/innersource-journey-does-2020>
- InnerSource Commons - a community that shares InnerSource practices: <https://innersourcecommons.org>
- InnerSource Patterns, put a name on your practices: <https://github.com/InnerSourceCommons/InnerSourcePatterns>
- Adopting InnerSource book: <https://github.com/InnerSourceCommons/innersourcecommons.org/blob/master/assets/files/AdoptingInnerSource.pdf>
- Getting Started with InnerSource book: <https://www.oreilly.com/programming/free/getting-started-with-innersource.csp>

Credits

- Layers, Andrey Grinkevich, <https://unsplash.com/photos/0x6RTts1jRU>
- Rent a Delorean Time Machine, Delorean Rental, <https://unsplash.com/photos/jLWR4eYzXbw>
- One of my favourite places, Scott Jackson, <https://unsplash.com/photos/OSPVacVamU0>
- Cheers, Christine Jou, <https://unsplash.com/photos/6PPQDX2liKE>
- Number counter, Motion Island, <https://blog.motionisland.com/wp-content/uploads/2017/03/Simple-After-effects-Counter.gif>
- Fail Growing Up, Return-It Gang, <https://giphy.com/gifs/returnitgang-growth-growing-up-sprout-5YI9jArDeVltTd2x6>
- The road less traveled, Wei Pan, <https://unsplash.com/photos/kQTBcHVV8Pc>
- Mushrooms, Joël van Schoonhoven, <https://unsplash.com/photos/WpdqCznJI-8>
- Amish barn-raising near my home, Randy Fath, <https://unsplash.com/photos/u1rq-htexOY>
- Uh oh, Hello I'm Nik 📸, <https://unsplash.com/photos/5dxin91R4ZM>
- Valvoline car drifting on road, PhotoPum RanaRoja, https://unsplash.com/photos/5_e8ay8l0us
- Person holding two baseballs, Jose Morales, https://unsplash.com/photos/3k_FcShH0jY
- Nevada desert from plane, Jason Leung, <https://unsplash.com/photos/wUWv2QVcgxE>
- Great Basin Desert, Manny Becerra, <https://unsplash.com/photos/8hKMPVQ2ZHU>
- Somewhere in Nevada, Deborah Ramos, <https://unsplash.com/photos/IF-R0aLkn1Y>
- Grand Canyon National Park, United States, Yuriy Chemerys, <https://unsplash.com/photos/3wTkYP5fP3g>
- Bug Eggs, Bankim Desai, https://unsplash.com/photos/9stHwN_pTui
- Caterpillar, Jairo Alzate, <https://unsplash.com/photos/aPCf4QhVsN4>
- Butterfly, olga brajnovic, <https://unsplash.com/photos/38oQta2JGZg>
- Downtown Vegas, NeONBRAND, https://unsplash.com/photos/txEjgaqYu_w
- Bird scratching, Karo Kujanpaa, <https://unsplash.com/photos/7Uk2xNZeobs>
- Pillars, Photos Hobby, <https://unsplash.com/photos/M7V9rglHaFE>
- Is It Worth the Time, xkcd, <https://xkcd.com/1205>
- Transparent dice, Jonathan Petersson, <https://unsplash.com/photos/W8V3G-Nk8FE>
- In person training, NESA by Makers, <https://unsplash.com/photos/IgUR1iX0mqM>
- Ladder to Nowhere, Paulius Dragunas, <https://unsplash.com/photos/KcAE40RTGbK>
- Thanks, Kelly Sikkema, <https://unsplash.com/photos/fvpgfw3lF1w>
- Catch Me If You Can Attorney, Giphy, <http://gph.is/1aExquC>
- Code quality, Chris Ried, <https://unsplash.com/photos/ieic5Tq8YMk>
- Cocoon and butterfly, Suzanne D. Williams, https://unsplash.com/photos/VMKBFR6r_jg
- Thank you, David Lusvardi, <https://unsplash.com/photos/8vvhEiUPRSY>
- All other images purchased on Deposit Photos