

DOES '23

Impacting Operational Efficiency on a Global Scale



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CEO, LinearB



This session is about...



Scaling

150 → 400 Devs

Data

Building a metrics
program

Impact

81% Decrease in
Cycle Time



About Syngenta



**Helping farmers.
Fighting climate
change.**

Experience



Syngenta

Full-time · 3 yrs 4 mos
Chicago, Illinois, United States

- **Global Head of Delivery - Digital Product Engineering**

Jun 2022 - Present · 1 yr 4 mos

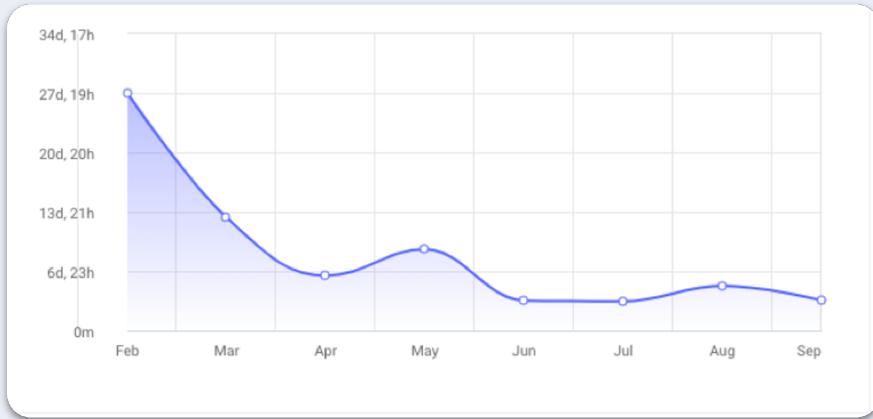
Skills: Data Privacy · Strategic Thinking · Test-Driven Development · Execu ...see more

- **Head of Digital Product Engineering - NA**

Jun 2020 - Jun 2022 · 2 yrs 1 mo

6 Month Results with LinearB

Cycle Time: 81% Decrease



Planning Accuracy: 33% Increase



- WorkerB critical tool for our teams
- Major reductions in PR Pickup and Review times
- Greater adoption of Feature Flagging platform to allow more frequent deploys

- Teams evaluated ways of working
- Increased rigor on “is work ready”
- Everyone showed up prepared for Planning

We're growing...fast



What worked at 150 doesn't work at
400 and growing...

Growth challenges we faced



Time zones introduced communication challenges and delays



Common Cropwise Platform

4 Connected Platforms | 11 Consumer Applications



Handoffs to QA / Security / DevOps

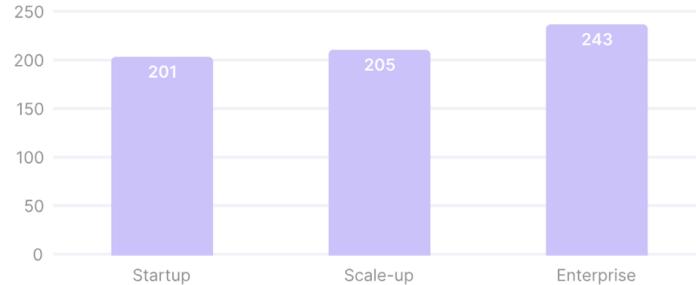
Growth Challenges



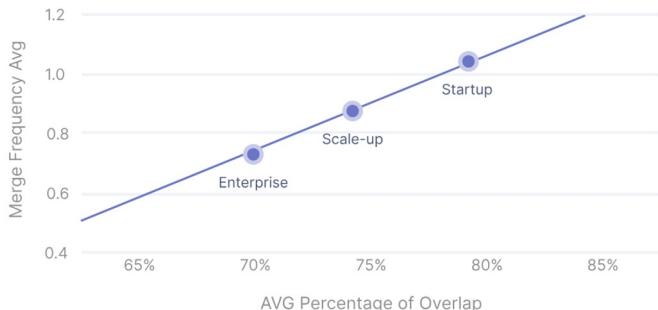
Key Takeaway

Enterprises have longer cycle times than startups and scale-ups.

Cycle Time By Org Size



Work Hours Overlap vs Merge Frequency in Teams



Benchmarks by number of employees

Startup: 0-200 employees

Scale-up: 200-1000 employees

Enterprise: 1000+ employees

● Merge Frequency

— Trendline for Merge Frequency

Startup: 0-200 employees

Scale-up: 200-1000 employees

Enterprise: 1000+ employees



Key Takeaway

Overlapping work hours improves merge frequency

Scoping Requirements

3 Things We Needed to Understand

Are we working
efficiently?

Are we working
effectively?

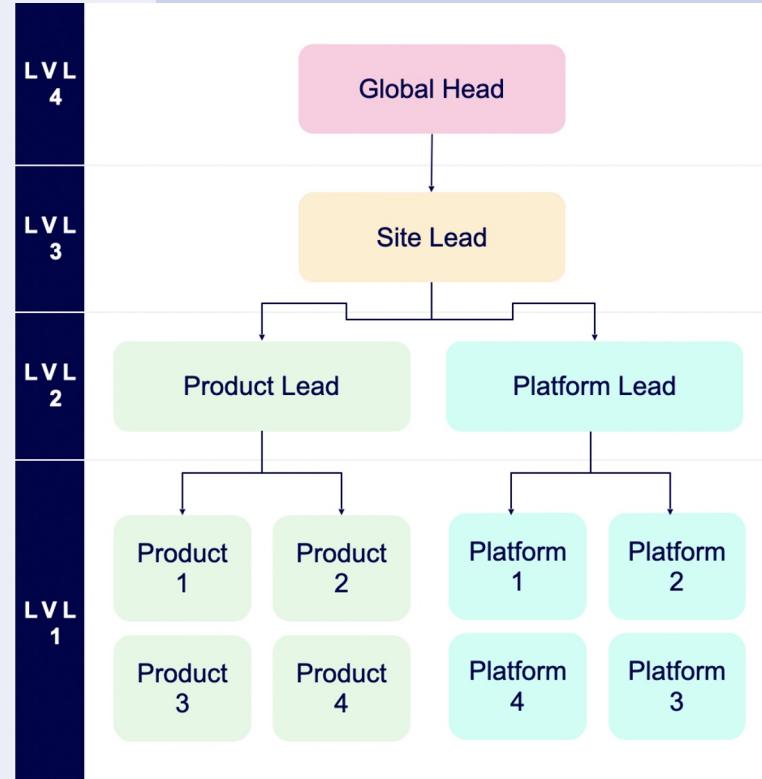
Are we working
safely?

Starting a Metrics Program

Goal: Autonomy to make the right decisions

Visibility & Reporting

1. Each level will own their scope and report up
2. Allows leaders to focus on bigger picture
3. Requires tooling to give teams ability to find bottlenecks and issues



Distributed model

2 Truths About Metrics

Truth #1

Whatever you choose will be gamified

Truth #2

Your choice incentives behaviors

Our Focus:

Being Agile, not doing Agile

A sustainable, steady flow of feature delivery

The Metrics We Care About



Cycle Time

Are we able to go from Idea to Production quickly?



Planning Accuracy and PR Size

Are we breaking down work enough to accurately move towards it?



Change Failure Rate

Are we able to move quickly without breaking things?



Mean Time to Recovery

If we do break them, can we detect and fix it quickly?



Security and Vulnerability Ratings (SCA)

Are we building in a safe and compliant manner?



Usage Analytics

Are our products having an impact in the market?

Implementing Engineering Metrics

Measuring something won't change anything

Distributed Governance

- Focus on enabling and empowering teams
- Operating rhythms drive
 - Retros / Planning
 - Regional Weekly staff meetings
 - Biweekly rhythm meetings
 - Quarterly global strategy

How we talk matters

- Good vs Evil
- Ownership vs Compliance
- Metrics aren't a cause, they are smoke
- Focus on moving the needle

Global Sharing

- Monthly sharing in Community Calls
- Current state summary areas of focus
- Sharing of experiments, successes, **and failures**

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Automating Metric Improvement

Real-time Workflow Updates with WorkerB

Quality



WorkerB



A pull request had 465 changes and was merged without review

PR: linweb/Projects top bar refactor

Related Issue: LINB-2178- Admin can self configure projects

Efficiency



WorkerB

APP

11:23 AM



/!\ gitstream requested your review on this pull request:

PR#455 linenv/daily.metrics sources deletion

@Theo Houston wants to merge 1 commit pr-merge-test

Files: 1 | Lines: 3

3min review

WorkerB notifies the reviewer

Policy



WorkerB

APP

11:23 AM



This PR is not linked to a Jira ticket:

PR#455 linenv/daily.metrics sources deletion

I can create this ticket for you in one click:

Updated org stats to show Jira

Issue type: TaskProject: Dev

Create Jira ticket

Automating Metric Improvement

Programmable Workflows with gitStream

Expert Reviewer

gitstream-ci added the `suggest-reviewers` label 13 minutes ago

gitstream-ci bot commented 12 minutes ago

Code experts: 2 users matched threshold 0.1

John Doe have most 🚀 activity in the files.
Jane Smith have most 💡 knowledge in the files.

See details
`src/app/services/my_service.py`

Activity based on git-commit:

	John Doe	Jane Smith
MAY	21 additions & 2 deletions	32 additions & 0 deletions
APR	5 additions & 3 deletions	54 additions & 5 deletions
MAR	38 additions & 12 deletions	43 additions & 5 deletions

Orientation Labels

WNB-6971 Analytics page CTAs × 30 min review
#2797 opened 9 hours ago by john-doe • Review required 4 tasks

WNB-7099 refactor extract-RESOURCE_NAMES ✓ 10 min review
#2795 opened yesterday by jane-smith • Approved 4 tasks

WNB 6960 add text to issues UI × 1 min review
#2794 opened yesterday by jack-c • Review required 2 of 4 tasks

WNB-7092 fix org settings × 1 min review
#2793 opened yesterday by jane-smith • Approved 2 of 4 tasks

WNB-7018 change behavior of history × 1 min review
#2759 opened last week by john-doe • Review required 4 tasks

Safe Changes

Jack Champ commented last week • edited Member ...
This fixes some formatting issues reported by the new linter.

Update README.md 5b3dcbe

gitstream-ci bot added the `safe-changes` label last week

gitstream-ci bot approved these changes last week View reviewed changes

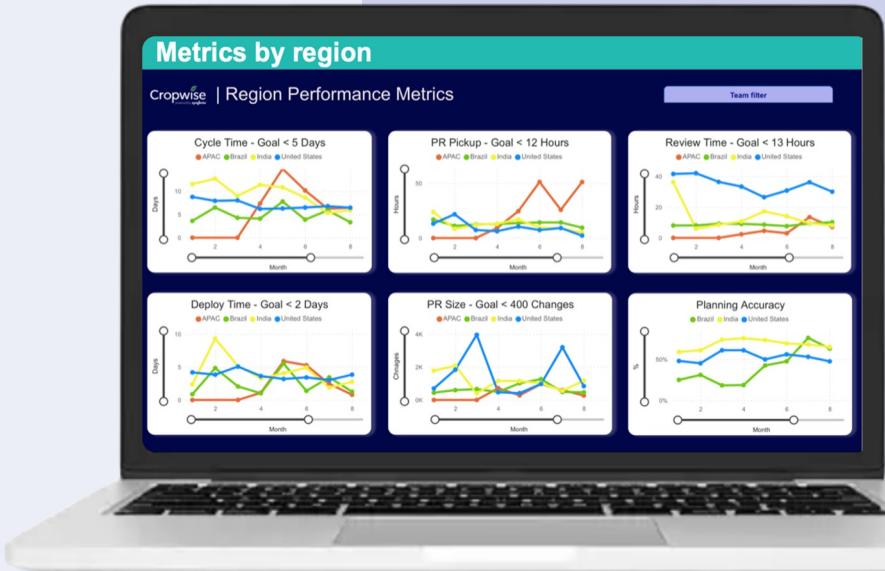
gitstream-ci bot commented last week
This PR is considered a safe change and has been automatically approved.

Our Data Tools

Engineering Metrics - SCA - Analytics Platform

Required Outcomes

- Facilitates finding trends
- Easy to find and highlight outliers
- Allows each level to focus appropriately



Month

Team name	Cycle time	PR pickup	Review time	Deploy time	PR size	Planning accuracy
Team A - Analysis Platform	5	9	4	6	302	
Team B - Cognitive Analytics	5	5	19	4	1906	50.00
Team C - Cognitive Yield	6	11	7	6	778	
Team D - Cognitive Imagery Web	3	11	6	1	366	1.00
Team E - Yield	7	5	10	9	869	
Team F - Core Services - Weather	6	21	5	3	623	
Team G - Core Services - Sensors	5	10	8	4	1260	
Team H - Core Services - Yieldbridge	4	8	8	3	3335	
Team I - Core Services - Yieldcast	11	32	13	11	276	
Team J - Yield Management	5	17	7	7	490	
Team K - Yieldcast Live	6	13	12	1	256	
Team L - Yieldcast Live Metrics	6	29	5	4	735	
Team M - Yieldcast Remote Sensing	4	13	20	1	387	
Protected Assets	4	12	16	2	296	
Protected Sensors	3	9	6	2	329	
Protected Yield	3	11	8	1	321	
Protected Yieldcast	3	14	8	1	794	
Protected Yieldcast Metrics	3	15	12	1	454	
Protected Yieldcast Remote	3	8	5	1	477	
Total	10	11	4	4	694	75.20
	4	7	11	2	201	
	5	13	9	3	690	65.62





| Sonar cloud metrics

Squad adj.
Squad adj.

Language
All

Type
All

Bugs

5

Vulnerabilities

0

Hotspots reviewed

59

Code smells

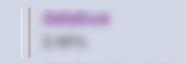
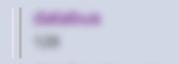
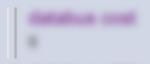
18

Coverage

67%

Duplications

1%



Average security rating

1

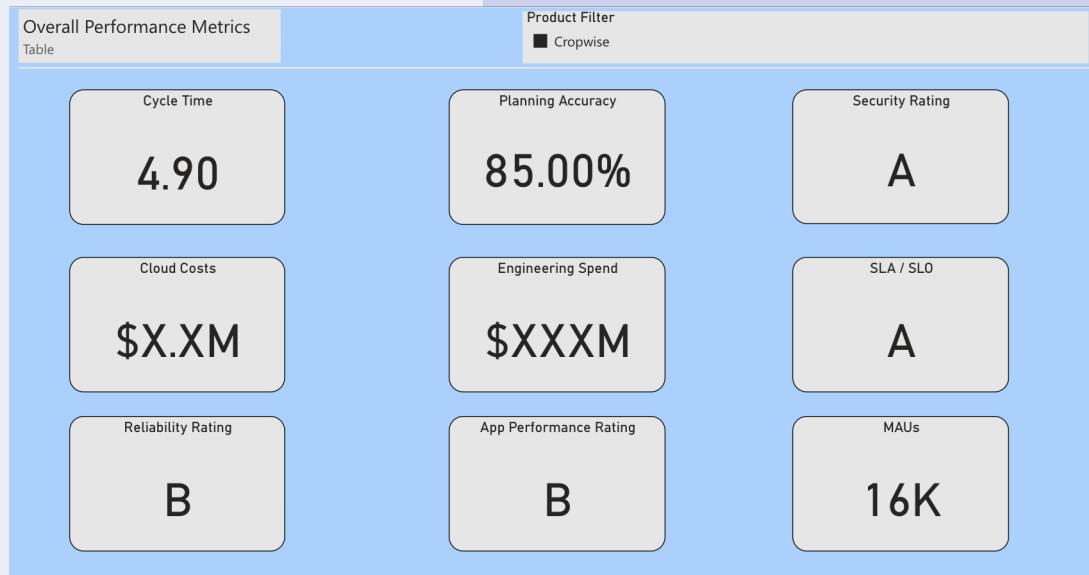
Average reliability rating

1

End Goal

High-level drill down for teams

- High level summary of key metrics
- Filters to provide context
- Deep links to details



Let's start a metrics program together

Average improvement in your
first 120 days

10.2x

ROI on LinearB

47%

Increase in Operational
Efficiency

DRATA



Thank you