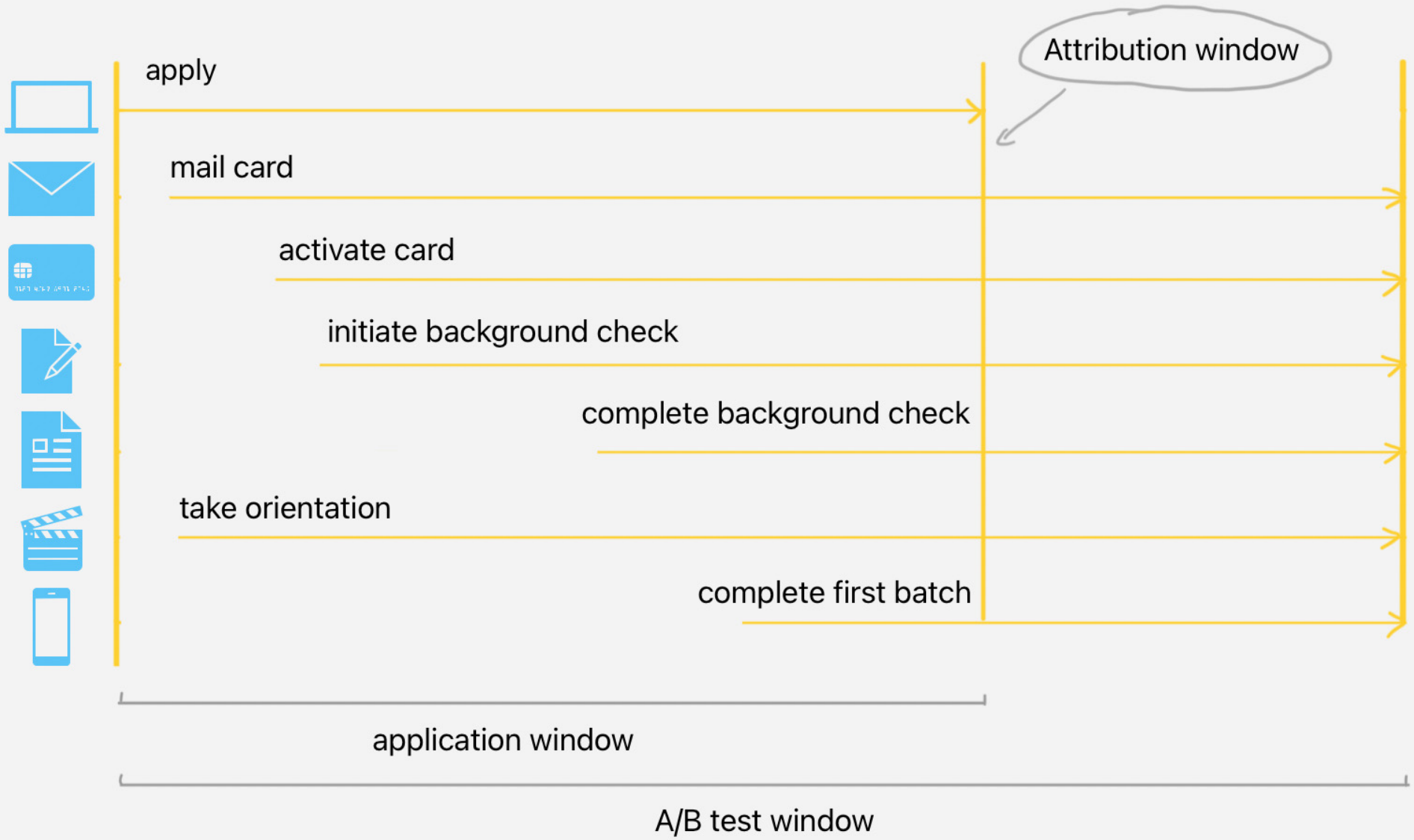
DATA SCIENCE CHALLENGE

A/B TEST

MUXIN LIU

SEQUENCE OF EVENTS FOR A SHOPPER HIRING PROCESS



Q1: EVALUATE A/B TEST RESULT

group	#applicant (sample size)	#completed first batch	Conversion rate
control	10,024	2,678	26.7%
treatment	4,958	2,115	42.7%
conclusion			conversion rate significantly increased (z score 19.2; significantly at 90%)

improve

If initiating background checks earlier, increases the first batch completion rate.

Q2: IS THIS CHANGE COST-EFFECTIVE?

We are using background check completed rate and the average first batch completion to evaluate cost-effective.

group	average_background_check_completed	cost (x30)	average_first_batch_completion	Dollar efficiency (cost/people)
control	86%	$20	27%	$96
treatment	94%	$27	43%	$70
z score at 90%	17.1 significant			

Yes, cost effective

Q3: OBSERVATION

job site search channel
- lowest conversion rate in the control group
- conversion rate significantly improved

shopper referral bonus channel
- highest conversion rate in the control group
- generates effective leads

social media channel
- generate ineffective leads in the test
- conversion rate insignificantly improved

web search engine channel
- lowest conversion rate in the control group
- conversion rate significantly improved

control

	conversion rate
job site search	16%
shopper referral bonus	34%
social media	17%
web search engine	25%
overall	27%

treatment

	conversion rate
job site search	38%
shopper referral bonus	50%
social media	20%
web search engine	45%
overall	43%

Q3: RECOMMENDATION

To perform A/B test to evaluate if mandatory orientation would improve the conversion rate.

(control group)	successful hiring	Not successful hiring
orientation completed	47%	42%
no orientation	53%	58%
	100%	100%

The conversion rate in social media channel is much lower than average. To perform A/B test to check if the social media channel is an effective way to attract potential shoppers.

group	social media conversion rate	overall
control	17%	27%
treatment	20%	43%