2020
AIRLINE DIGITAL
OPTIMIZATION YEARBOOK

Airline industry insights for a higher conversion and better user experience

ABOUT THE AUTHOR

Iztok Franko is passionate about digital marketing and e-commerce. He has more than 10 years of experience as a CMO and CIO in airline, travel and multinational companies. He currently works as a strategic digital marketing and ecommerce consultant for global airline and travel brands.

Through practicing true data-driven digital marketing, testing several ecommerce processes and experimenting with different team management approaches, he has established a conversion optimization framework that works.

Iztok also regularly writes and speaks about travel and airline marketing, ecommerce, conversion optimization and ancillary topics.

He is the founder of diggintravel.com, a content platform for smarter travel marketing.

ABOUT DIGGINTRAVEL

Diggintravel is a content platform, designed for airline ecommerce and digital marketing professionals.

Diggintravel was built to help digital marketers in the travel industry, especially airline professionals who run and manage online sales.

We provide in-depth insights and research on airline ecommerce and digital marketing. Diggintravel specialzies in airline conversion rate optimization and ancillary revenue disciplines and by combining both helps airlines become true digital retailers.

If you are an airline looking to grow your online sales; we can help you with tailor-made workshop for airlines, advanced analytics designed for airline booking funnel and conversion optimization consulting services.

Glassbox

ABOUT THE SPONSOR

Glassbox empowers organizations to manage and optimize the entire digital lifecycle of their web and mobile customers. Leveraging unparalleled big data, behavioural analytics, session replay, free-text search, application monitoring, and machine learning capabilities, Glassbox enables enterprises to see not only what online and mobile customers are doing but also why they are doing it.

Most importantly, Glassbox informs and facilitates action based on those insights that can lead to enhanced customer experience, improved conversion ratios, higher sales, agile IT troubleshooting, and also improved regulatory compliance and faster customer disputes resolution. Glassbox's solutions are used by medium to very large enterprises globally across a wide range of verticals.

Glassbox

Seeing Through the Unknown

Glassbox unveils real customer experiences that help the different departments within your airline, refine their user and audience understanding and align themselves around meaningful CX KPIs.

WITH GLASSBOX YOU WILL:

- Increase conversion rates
- Reduce churn
- Improve your customers' digital experience
- Reveal hidden lines of business and audiences
- Increase customer satisfaction
- Detect and prevent fraud
- Improve Contact center performance Stay digitally compliant and easily respond to regulatory inquiries

★ ★ ★ ★ ★   Dec 17, 2019

"Glassbox great at seeing what your customers do!"

"Glassbox gives you a deeper understanding of your customers actions online. It is very easy to set-up and it has great analytical tools."

★ ★ ★ ★ ★   Nov 18, 2019

"Glassbox: the great facilitator"

"Glassbox is much more than a session replay tool. It is an entire analytics platform which extends far beyond the typical web research teams."

*Reviews from   G2

To learn more about our platform or to book a demo:

✉ info@glassboxdigital.com   🌐 glassboxdigital.com

Glassbox

THE FOLLOWING EXPERTS PROVIDED INSIGHTS FOR THIS YEARBOOK:

STEFAN THOMKE
Harvard Business School professor and book author

Stefan is the author of the book Experimentation Works: The Surprising Power of Business Experiments and an authority on the management of innovation. He is a frequent conference speaker and advisor to global business leaders. He has taught and chaired executive education programs on innovation, R&D management, product & service development, and operations, both at Harvard Business School and in company programs around the world.

JOEL GOLDBERG
Chief Digital Officer (CDO) at Wizz Air

In his CDO role at Wizz Air, Joel is responsible for driving cohesive digital strategy across one of Europe's fastest growing airlines. As a member of the Executive Leadership Team, he is responsible for the airline's initiatives that deepen customer engagement, drive new revenue, digitize operational processes, enable greater employee collaboration, enhance crew experience and reimagine the way teams work.

RONNY KOHAVI
Vice President at Airbnb and book author

Ronny is co-author of the book Trustworthy Online Controlled Experiments: A Practical Guide to A/B Testing. He is an accomplished executive leader and technological innovator and an industry leader in controlled experiments, machine learning, personalization, and AI. Before joining Airbnb, Ronny led experimentation and personalization teams at Microsoft and Amazon.

ANNA POTANINA
Mobile User Experience and Conversion Specialist at Google

Anna is an expert in mobile user experience and conversion rate optimization (CRO). In her role as a product design consultant at Google, Anna is helping online businesses grow on mobile. She is also a regular speaker on UX topics, a Certified Google Design Sprint Master, an NN/g-certified UX professional, and a freelance illustrator.

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SHAHAR MARKOVITCH
Chief Digital & Information Officer at EL AL Israel Airlines

Shahar is Chief Digital Officer at EL AL Israel Airlines as well as the Director of Cockpit Innovation, a travel tech innovation hub company. He is passionate about building and scaling innovative organizations, transforming businesses, and inventing and delivering disruptive digital products that delight customers.

BOŠTJAN KOŽUH
Data Expert and Partner for Digital Analytics at Diggintravel.com

Boštjan helps companies connect business with technology, uncover insights locked within their data, and compete on analytics. He is an expert in visualization, analytics and big data using QlikView, Qlik Sense, Microsoft Power BI, SAS Visual Analytics, R Studio, Microsoft Analysis Services, Microsoft Integration Services, Tableau Software and the SAS Platform. His insights help Diggintravel's clients find conversion gaps and identify scenarios for optimization.

SHIVA MANJUNATH
Conversion Rate Optimization Manager at Gartner

Shiva is a conversion rate optimization (CRO) expert and leads optimization activities at Gartner. He is passionate about CRO and driving website optimization programs. Shiva enjoys drilling into data to understand each unique customer digital journey and understanding how to improve visitors' ability to seamlessly navigate a site.

HANAN BLUMSTEIN
GM APAC & Chief Value Officer at Glassbox

Before co-founding Glassbox, Hanan had chalked up over 15 years of high-tech experience with both successful start-ups and publicly-traded corporations. Previously, Hanan was Research and Development Manager and Functional Architect for Hewlett-Packard/Mercury, where he was responsible for the development of the HP SOA solution and other patent-pending innovations, as well as leading development of the company's End User Management application. Earlier in his career, Hanan held key roles in product development for ECtel/Neteye, Amdocs and Motorola. Hanan has a Bachelor's of Science in Computer Science and Mathematics from Bar Ilan University.

CHAD SANDERSON
an expert on the subject of digital experimentation and analysis at scale

Chad is a digital optimization, testing, and personalization specialist focused on the strategy, design, implementation, and analysis of winning experiments. Chad has the ability to explain the power of optimization on any level, to the statistics-minded data scientist or to the company's most important stakeholders, and can create the necessary processes to imbue the company culture with an optimizer's mindset. He was a featured speaker on optimization at Adobe Summit 2018 and CXL Live 2018.

WHERE'S WHAT

PART I.
INTRO AND HIGH LEVEL RESULTS

PART II.
SURVEY DETAILS PER SECTION

INTRODUCTION

3RD AIRLINE DIGITAL OPTIMIZATION SURVEY AND RESEARCH

AUTHOR'S NOTE

Wow! The past year has been one hell of a ride.

This is how I started my introduction to last year's research. Based on the events of the last month, I don't even know what to say this year. At this point you probably don't want to read yet another paper about COVID-19 (and I promise this will be a digital and ecommerce yearbook), but we just can't look past it.

Everything we do on a daily basis, our entire lives were completely changed in the past few months. At the moment of my writing, most airlines have either all aircrafts grounded or are operating at less than 10% capacity. Nobody knows when the situation will change and when we'll be able to start going back to normal.

Or what the new "normal" will even be. Currently, change and uncertainty are the only "normal" we have.

However, what we can predict is that the situation will get resolved sooner or later and that demand for travel will return eventually. The travel industry recovered and even grew after each of the past crises. But even with the return of travel demand and industry recovery, things will change.

Customer behavior and the behavior of users on your website and other digital touchpoints will change.

How? Nobody knows.

For now, we are all mostly guessing.
At the moment, I can point out two things, one positive and one negative, for your airline.

First, people will have more fears and there will be more "friction" when they book flights. At least initially. Now, more than ever, you'll need to understand your users, their fears, and their friction points and address them. A business traveler who flies locally will have completely different sets of questions than a family going for a summer break vacation. Fears and questions will differ by regions, countries, and probably even by timeframe as virus outbreaks could repeat.

Even more, a one-size-fits-all approach won't work anymore. You'll need to "dig" into your data and do agile user and UX research to understand different user segments and their behavior. You'll need to address their fears with relevant messaging and empathy. Forget about personalization; if you're agile and relevant with your messaging and your copy (and hence even product and pricing), you'll be doing a great job.

And remember, this is what Conversion Rate Optimization (CRO), or as we call it in this yearbook, Digital Optimization, is all about – **understanding your users and building relevant, data-driven user experiences and products – removing friction!**

Finally, I want to end this intro on a positive note. There will be opportunities as well. There always are in every crisis.

What we're already seeing now is more people are getting used to buying things online. There are new groups of first-time online customers appearing every day. Think of older people who used to go to travel agents only, or regions where online booking had not been adopted as much because of poor infrastructure.

This is changing rapidly. Airlines have always wanted to increase their direct ecommerce sales and wanted to enter new markets and segments. This is your chance!

However, you need to be ready and prepared. You need to master ecommerce and digital optimization. You need to level up your digital game, and you can start now!

This yearbook will provide you with d**igital optimization benchmarks and best-practices from 49 surveyed airlines**.

What's more, you'll have access to insights from some of the industry's best experts and global thought leaders (more on that in the next section).

You can start most of the things we'll cover in the paper right now. If you do, you'll be much better prepared for the new situation, the "new normal." A lot can be done even if your airline will downsize and cut costs and staff. Remember, knowledge is power, and working smarter sometimes means less is more.

Enjoy this yearbook!
Iztok

INNOVATION, AGILITY AND EXPERIMENTATION ARE NEEDED MORE THAN EVER!

Back in 2017, we started the Airline Conversion Optimization surveys and research with one mission: **to put CRO and digital optimization on the map for you and the airline industry**. We want to provide you with the best resources for digital optimization.

I'm more than happy to see we are succeeding at this and that this exciting field of marketing is getting more exposure and more people understand the value in it.

However, we won't stop here!

At the core of digital optimization are two things: **understanding your users (your audience) and experimentation.**

We need to push the experimentation mindset from your airline digital departments to the whole organization.

For now, most of the experimentation is done at the channel (UX) level. Testing things on your website and in your digital ads and emails is becoming the norm.

However, the value of experimentation is much greater if we apply it at the product level.

Stefan Thomke from Harvard Business School, an authority on business experimentation and innovation, told me this in our recent interview when we talked about experimentation:

"I think companies are now discovering that this is so powerful on the user interfaces; why not actually use it on the products as well? Why not start using experiments at the product level, not just basically on the channel?

This is essentially where experimentation came from, where it originated. I think airlines need to realize that if you want to leverage the full power of this, you have to go beyond just thinking about conversions on your website. You have to start thinking about products. Can you actually experiment with the products that you offer to your customers?"

And, when experimentation is done at scale, when it is embedded in the overall organization, it makes your decision-making much better:

"Business experimentation brings the scientific method to management decision-making. If you make changes without running experiments, you're playing the lottery."

Experimentation at not only a product level, but on a business level as well leads to better and faster innovation:

"Experiments allow you to be more innovative. Experimentation gives you the courage in your innovation because it gives you the evidence to back it up."

Now, more than ever, you will need to innovate to adapt and survive in the post COVID-19 world.

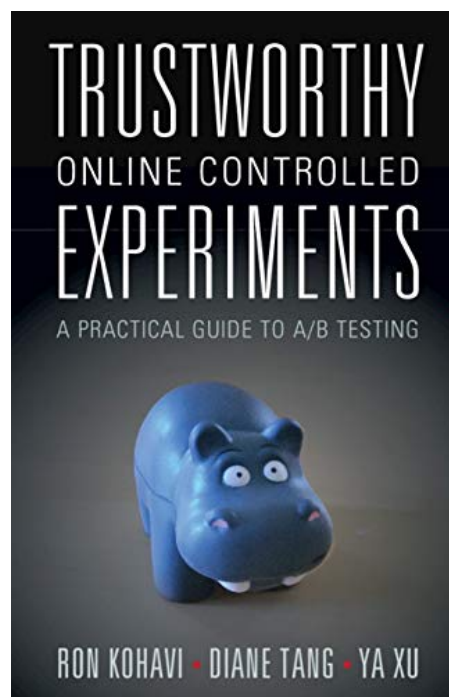# EXPERIMENTATION AND OPTIMIZATION – LEARN FROM THE BEST!

First, let me say thank you to all 49 airline digital leaders who participated in this project and survey. Without you, this yearbook would not be possible, so THANK YOU FOR YOUR SUPPORT!

Next, I want to thank all the experts who provided insights for this paper. In 2020 we started the **Diggintravel Podcast,** where we talk to various airline, digital, UX and other leaders.

The podcast enables me to provide you access to thought leaders, experts and book authors like the aforementioned **Stefan Thomke**.

Trustworthy Online Controlled Experiments by Ronny Kohavi
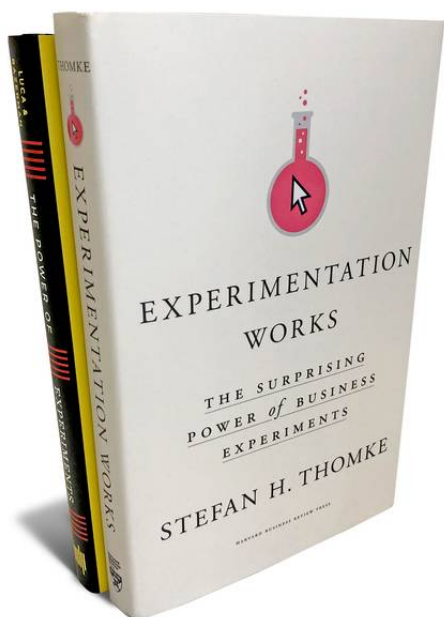
Experimentation Works by Stefan Thomke

Ronny Kohavi, Vice President at Airbnb and author of a book "Trustworthy Online Controlled Experiments" is another experimentation thought leader who provided insights for this yearbook.

I also talked to experts from **Google**, **Microsoft**, **Accenture**, **Gartner** and different **airline C-Level leaders**. A lot of the interviews were done with this yearbook and airline digital optimization pros in mind.

To be the best, you need to learn from the best.

Let's do this together and push experimentation and innovation to the next level!

COMPANIES THAT EMBRACE EXPERIMENTATION GROW FASTER

Is there any direct evidence or research showing that companies who embrace experimentation innovate and outperform the competition? Probably not, but there are some trends that show that companies with a strong experimentation culture grow faster than the rest (see the two examples below). However, I haven't seen any cases of someone saying that a data-driven, scientific approach to decision-making and product development could hurt.

Stefan Thomke:

"Organizations have discovered that an 'everything is a test' mentality yields surprisingly large payoffs and competitive benefits, and may even help stock performance."

Stock performance of leading experimenters (January 2, 2008 = 100)*

An equally weighted index consisting of Amazon, ETSY, Facebook, Google, Microsoft, Netflix, and Booking Holdings. These companies have spent years building infrastructures and cultures for large-scale experimentation.


Source: Bloomberg 2019.

*Of course, correlation isn't causation—share prices are the result of many factors, and the sample is limited to public companies. But we should still appreciate that the growth of these companies was affected by online business experiments. The analysis was prepared by James Zeitler at Harvard Business School's Baker Research Services using data from S&P 500 data from Bloomberg. He started with a base level of 100 at a base date of January 2, 2008. Then he calculated the return for each constituent of the index each day and found the average of the returns across constituents. For an equal-weighted index, it's a simple arithmetic average.

Source: Stefan Thomke, Experimentation Works

Dan Siroker, Founder, Optimizely:

"If you look at the Fortune 1000 companies five years ago, the CEOs of companies that embody a culture of experimentation, these CEOs focus on the number of experiments they run every single year, every single month, every single day. And these are the companies that have grown, actually over the last five years, over 700%. So, I think these are the CEOs where they see experimentation as core to the way their organization runs and their culture."
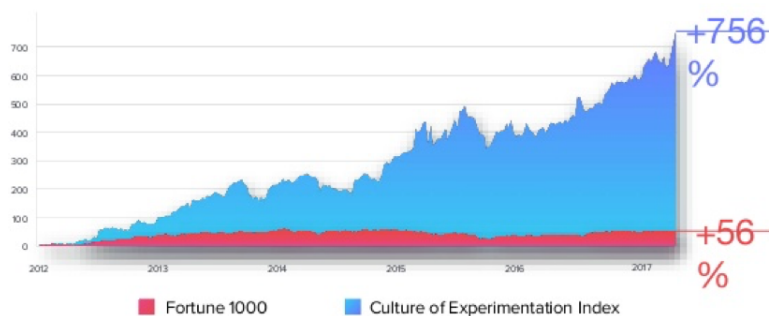
Source: Optimizely

ABOUT THE SURVEY

ABOUT THE 2020 AIRLINE DIGITAL OPTIMIZATION SURVEY

The Diggintravel 2020 Airline Digital Optimization Survey is the third survey and benchmark of digital optimization in the airline industry.

Going into the third year of our evaluation, this survey will provide you with an overview of the evolution of this exciting ecommerce discipline. This survey certainly won't be the last, as Diggintravel will continue following digital optimization developments and airline ecommerce trends going forward. Every year, the survey evolves as we continue to develop our maturity model and our digital optimization questionnaire.
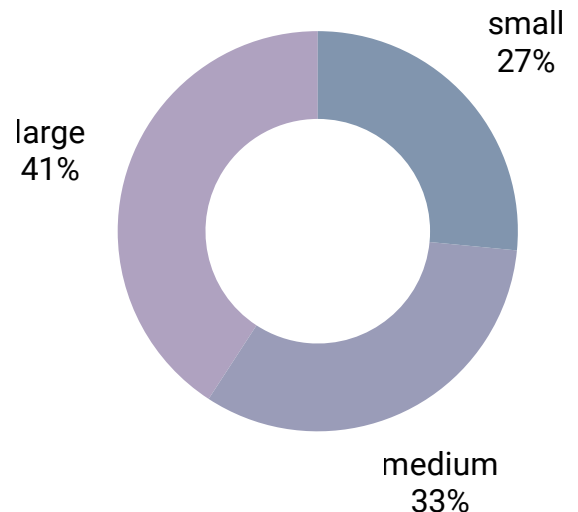
The survey investigates the maturity of the digital optimization processes and key challenges airline professionals face in their conversion optimization efforts.

During the first quarter of 2020, our survey questionnaires were sent to more than 110 airline senior ecommerce, optimization and digital marketing executives.
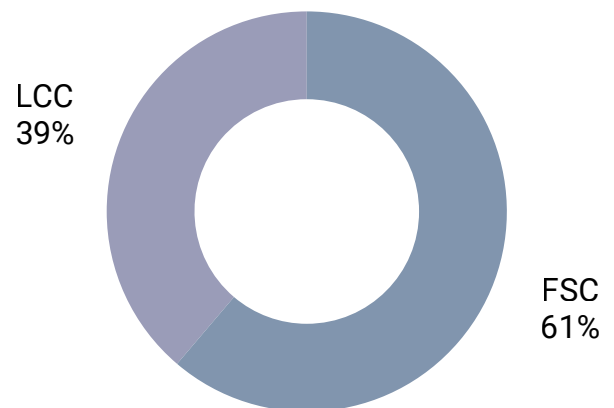
The survey represents **the views and insights of 49 carriers** (a 29% increase from last year's turnout, where 38 airlines participated).

The survey will provide you an intriguing insight into the state and developments of digital optimization for the airline industry.
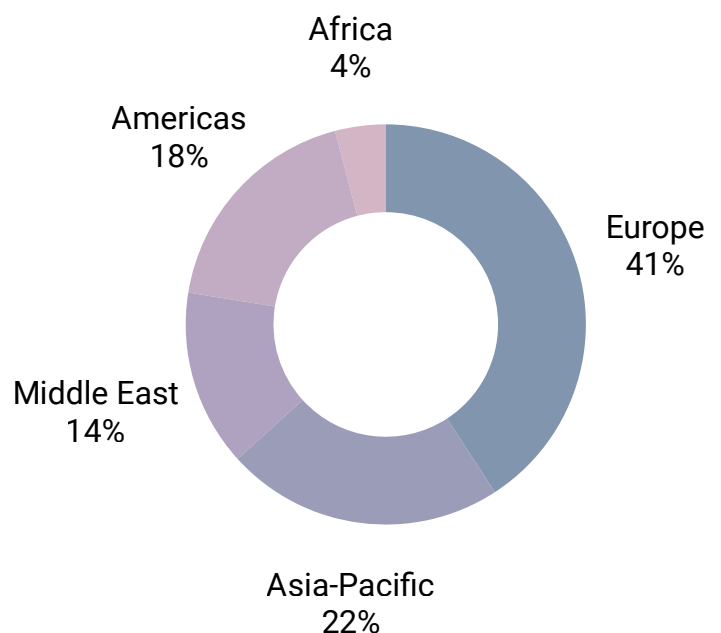
BY SIZE

large 41%
small 27%
medium 33%

BY TYPE

LCC 39%
FSC 61%

BY GEOGRAPHY

Africa 4%
Americas 18%
Europe 41%
Middle East 14%
Asia-Pacific 22%

AIRLINE DIGITAL OPTIMIZATION MATURITY MODEL

WHAT WERE WE ASKING

The goal of the survey was to evaluate the digital optimization maturity within airline organizations.

For evaluation of maturity we assessed several digital optimization maturity models and revised last year's Diggintravel Airline Conversion Optimization Maturity Model.

The new and r**evised Diggintravel Airline Digital Optimization Maturity Model** consists of 8 areas:

- 7 general digital optimization areas: people, skills, analytics, user and UX research (revised area), test quantity, tools, organizational support

- 1 airline specific area: internet booking engine (IBE)

You can see the exact questions and results for each area in the special section at the end of this report.

Each area was ranked from Level 1 (basic) to Level 5 (most advanced).

We also added new questions to evaluate the maturity of the digital optimization processes in addition to the 8 questions by area.

These were the new questions added to the questionnaire:

- Does your team follow a process for conversion optimization?

- Does CRO and digital optimization have its own budget?

- How are experiment results and learnings implemented and shared across the organization?

Based on the answers to the additional maturity questions, the final maturity score was adjusted.

As a result, the **2020 Airline Digital Optimization Maturity Model** was created (see next section).

Since personalization is a hot topic and we believe it is tightly connected with digital optimization and CRO (conversion optimization), we evaluated **whether airlines combine conversion rate optimization and personalization activities and what kind of personalization engines airlines use**. That's why you'll see a special section on personalization in addition to all maturity model areas in the report.

Additionally, we asked each participant about the key challenge that limits them from taking digital optimization to the next level.

THE DIGGINTRAVEL AIRLINE DIGITAL OPTIMIZATION MATURITY MODEL

The best airlines know that digital optimization is not a set of "hacks" and that CRO is not just about A/B testing your landing pages or new features. Digital optimization is a process; it's about building a data-driven culture and an organization that supports experimentation. What's more, the best companies take experimentation beyond just the digital space.

The goal of the Diggintravel Airline Digital Optimization Maturity Model is to help airlines evaluate the level of their digital optimization process in each of the key areas.

The Maturity Model also helps airlines strategically plan actions needed to advance their digital optimization process in each area.

Progress in most cases is evolution, a step-by-step advancement, and rarely revolution (skipping steps in the process).

Finally, the Maturity Model is also a tool for self-assessment for airlines to realistically assess their real digital optimization and ecommerce competence. In many cases, there is an organizational belief that the organization's own ecommerce and digital optimization competence is at a higher level than it actually is.

Only when we perform a systematic evaluation of each area (especially the user research activities in place and quantity of tests) do we usually get the realistic picture.

	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
PEOPLE	Online marketing specialist	Ad-hoc or part-time conversion optimization resource	Full-time conversion optimization resource (CRO specialist)	**Small CRO Team:** web analyst, designer, developer, CRO specialist	**Full scale conversion team** in addition to the small team - UX researcher, copywriter, psychologist
CRO SKILLS	Basic online and digital marketing knowledge	Basic conversion optimization knowledge, UX and analytics basics	Deeper knowledge and experience with conversion optimization (CRO, UX, Analytics, A/B Testing, Content & Copywriting)	**Advanced CRO knowledge** Level 3 + UX excellence, user behavioral knowledge, advanced analytics including segmentation)	**Experts in conversion optimization** Level 4 + conversion centered design, analytics experts, testing automation, personalization)
USER AND UX RESEARCH	Basic analytics and conversion reports; sales reports	Level 1 + advanced analytics reports, session recordings, simple A/B testing, heat maps and click maps, ad-hoc customer surveys	Level 2 + regular customer feedback and survey analysis, form analysis, occasional unmoderated or moderated user testing	Level 3 + scheduled and planed moderated and unmoderated user testing, customer struggle scores, prototype testing	Level 4 + user testing at scale, eye tracking, biometric research, anomaly detection leveraging AI/ML
DIGITAL ANALYTICS	Basic web analytics (ex. standard Google Analytics reports)	Level 1 + advanced web analytics setup (ex. Enhanced E-Commerce for GA, custom goals, events, metrics and simple funnel reports)	Level 2 + detailed funnel analytics, attribution modelling, cross-device tracking	Level 3 + advanced tools for visualization like Google Data Studio & BigQuery, Tableau, Qlik, Power BI)	Level 4 + data science (predictive analytics, machine Learning with ex. R or Python), anomaly detection leveraging AI/ML
TESTING QUANTITY	**None or minimal:** 1-2 tests per quarter	**Ad-hoc testing or project based:** 1-2 tests per month	**Regular and planned testing** 2-5 tests per month	**Interactive testing** 5-10 tests per month	**Disciplined testing** 10+ tests per month
CRO TOOLS	Basic web analytics platform, performance monitoringt	Level 1+ Advanced web analytics platform, simple A/B testing tools, simple user research tools	Level 2 + advanced customer research tools, customer experience analytics tools	Level 3 + advanced or own testing platform; simple personalization tooling; project management tool for optimization	Level 4 + own testing platform embedded in the core digital platform; advanced personalization t.; predictive analytics & optimization tools
INTERNET BOOKING ENGINE	IBE doesn't support A/B testing and experiments	Simple A/B testing and experiments are possible but with workarounds and take long time & effort to implement	Can do basic and semi-complex experiments and A/B tests on ongoing basis	Can do split-path A/B testing, have & test several versions of booking flow at the same time	Completely own and mange booking flow and have no limitations with A/B testing and experiments
ORGANIZATION SUPPORT AND PROCESS	**None** Conversion optimization is recognized on individual level	**Head of E-Commerce** Conversion optimization is recognized on department level	**Director level** Conversion optimization is recognized by director or higher management	**Top management support** Conversion optimization is recognized and supported by VP level executive	**Entire organization** Conversion optimization is recognized as a crucial activity and has companywide (C-level) support

DO YOU WANT TO TAKE **YOUR DIGITAL OPTIMIZATION TO THE NEXT LEVEL?**

*This special airline digital optimization workshop is **the best first step!***

Discover all of the most important aspects of airline conversion optimization (CRO) in a **hands-on, 1-day workshop.**

Learn – we'll provide you with airline Ecommerce and CRO best practices and benchmarks based on our research.

Identify - we'll deep dive into your booking funnel analytics and help you identify key optimization scenarios.

Plan – we'll evaluate your CRO maturity and help you plan the next steps based on our CRO maturity model.

Execute - we'll help you prepare and execute first optimization scenarios and A/B tests.

CONTACT iztok.franko@diggintravel.com FOR A DRAFT WORKSHOP AGENDA

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KEY FINDINGS

FINDINGS SUMMARY – STATE OF AIRLINE DIGITAL OPTIMIZATION

Based on the revised Diggintravel Airline Digital Optimization Maturity Model and survey results by each area, we classified each participating airline into one of the following four categories: **Laggards, Challengers, Visionaries, Leaders**

We grouped our eight **maturity model areas** into two major groups:

- **Completeness of vision**—here we grouped areas that relate to understanding the importance of the digital optimization process, culture and organization (People, Skills, and Organizational Support).

- **Ability to execute**—here we grouped areas that relate to the ability to execute a digital optimization process in practice (Analytics, User and UX Research, Test Quantity, Tools, and Internet Booking Engine).

We used additional questions about the maturity of the digital optimization process (Is the process documented?; Does it have a dedicated budget?; How are experiment results shared?) to adjust the final maturity assessment for each participating airline.

According to our benchmark, we detected:

- 15 Laggards
- 4 Challengers
- 23 Visionaries
- 7 Leaders

The graph below shows how these categories correlate with the size and type of airlines.
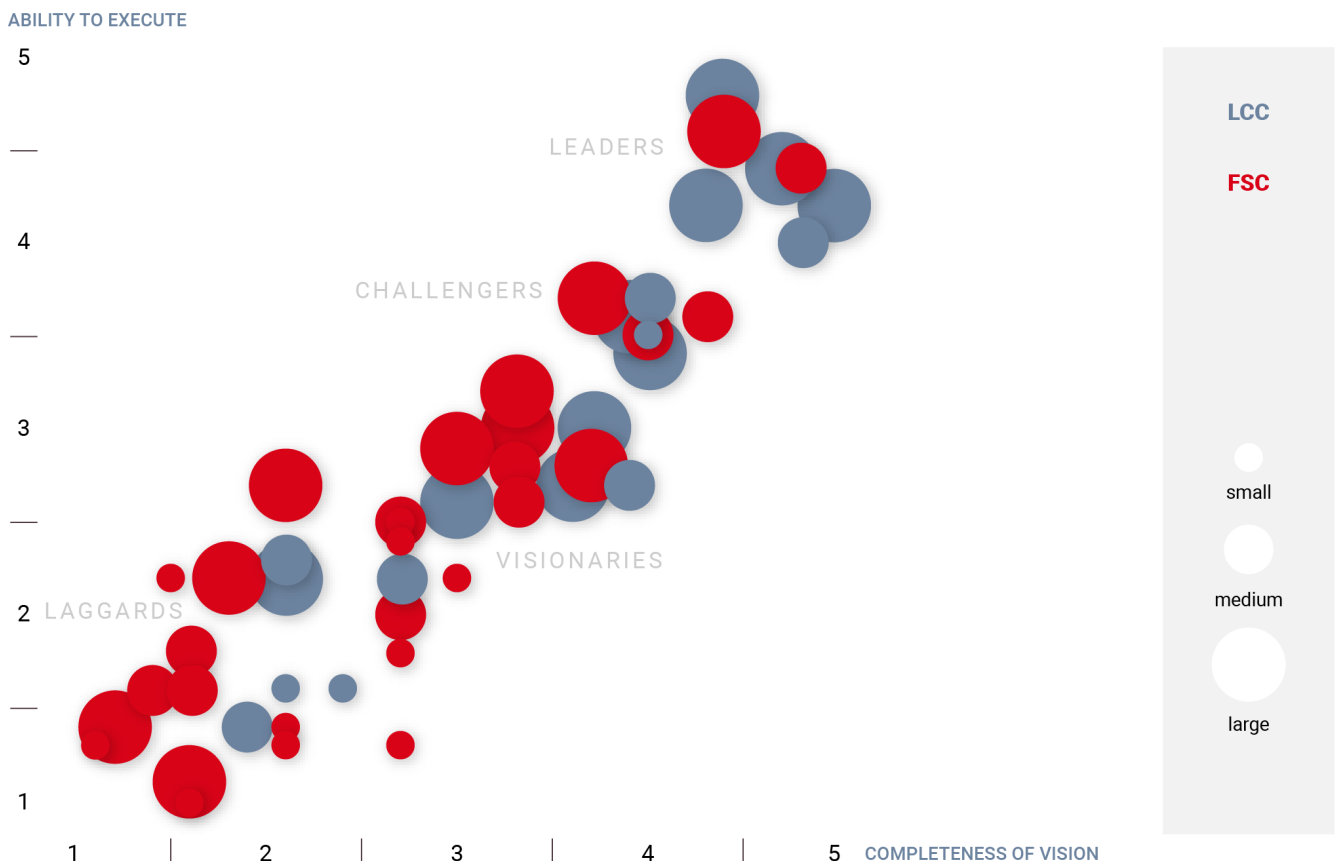
LAGGARDS

According to our maturity model, Laggards are the airlines that benchmarked the lowest (around Level 2 or less on average) across all digital optimization framework maturity model areas. 15 out of 49 airlines are in this group; 8 out of 15 airlines in this group are small sized airlines.

I. People and company support:
These airlines are either just starting out with their digital optimization process or have not yet recognized digital optimization and CRO as a critical part of their company growth. For the vast majority of airlines in this group, digital optimization is recognized and supported on a departmental level (usually the ecommerce department) or even individual level (ecommerce or digital optimization specialist, enthusiast).

Only 1 airline out of 15 in this group claimed to have a conversion optimization team in place. 1 other airline claimed to have a full-time digital optimization resource. For 13 other airlines (out of 15 airlines), conversion optimization is performed by an ad-hoc or part-time conversion optimization resource or an online marketing specialist with general digital marketing knowledge.

II. Skills and knowledge:
"Skills and knowledge" was the highest ranked area based on the airlines in this group. 9 out of 15 airlines claimed to have knowledge and experience with conversion optimization (CRO, UX, Analytics, A/B Testing, Content & Copywriting). Others said they have general digital marketing knowledge or basic knowledge about CRO.

Based on the answers in the "People" category, we could understand that airlines in this group have a general understanding of what skills it takes do execute digital optimization, yet they lack the dedicated resources and team to do it in practice on an ongoing basis.

III.User & UX research, tools and analytics:
Understanding your users is the core of digital optimization, and this is the area where Laggards struggle the most. Almost half (7 out of 15) of Laggards only do web analytics when it comes to user research. Others do basic user & UX research (some session recordings, simple A/B testing, heat maps and click maps, ad-hoc customer surveys). All airlines in this group either stated web analytics is their only tool or use simple digital optimization tools (simple A/B testing tools, simple user research tools). In addition, all but one of the Laggards claim to have internet booking engines (IBEs) that are not flexible enough for A/B testing. Most airlines in this group do basic web analytics with some additional settings (goals, simple funnel report, etc.).
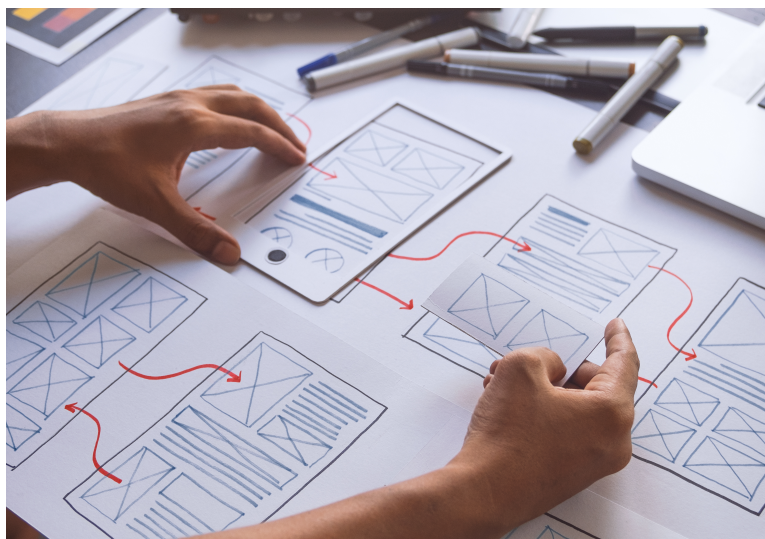
IV. Testing quantity:
Only 2 out of 15 airlines in this group claimed to do regular testing (2-5 tests per month). All other Laggards do A/B testing and other forms of experimenting on an ad-hoc project basis only (if done at all). If testing is performed, it's usually done for major website redesigns. Most claimed lack of resources as their biggest obstacle to doing A/B testing on a regular basis.

V. Process, budget and knowledge sharing:
Most Laggards are just getting started with their digital optimization activities, so the process is not documented and structured (only 2 out of 15 claimed to have a documented optimization process). Only 3 out of 15 claimed that they have a budget for conversion optimization, though it's not a dedicated one but rather part of the overall ecommerce budget. Almost half of the Laggards don't share experiment results and learnings (not shared at all or shared strictly within the optimization team).

NEXT STEPS FOR LAGGARDS:
EDUCATE!

Learn about digital optimization CRO as much as possible and understand the value of a structured digital optimization process.

Find and train an internal digital optimization champion who will put experimentation and CRO on the map. It's crucial to evangelize, advertise and advocate A/B testing within the ecommerce and digital departments to foster testing and a data-driven culture. Once education and intradepartmental acceptance is achieved, it will enable airlines from this group to build a good case for digital optimization and experimentation with organizational buy-in. At that point, a small, agile digital optimization team and process can be formed

CHALLENGERS

We classified as Challengers the airlines that are not Laggards (so their average score per area is above Level 2), but which are ranked higher in "Ability to Execute" than "Completeness of Vision." Only 4 airlines fit these parameters, so this is the smallest of the four groups. Challengers do more of "execution," but in a less structured and organized way – or they have advanced digital optimization tools and do advanced analytics and some testing, but digital optimization is not recognized on a broader organizational level.

I. People and company support:
3 out of 4 airlines in this group don't have a CRO team in place. Furthermore, 2 airlines claimed they don't have a dedicated conversion optimization resource. This means digital optimization is mostly done on an individual level. Digital marketing specialists perform digital optimization activities, but CRO is still not a core ecommerce process. This is evident from organizational support. None of the 4 airlines in this group said that CRO is recognized and supported by top management. Only 1 claimed digital optimization had support on a director level; for the other 3 it is mostly on an individual or ecommerce departmental level.

II. Skills and knowledge:
Most airlines (3 out of 4) in this group claimed to have a deep knowledge about conversion optimization (e.g., CRO, UX, analytics, A/B testing and copywriting).

However, this knowledge is mostly gathered on an individual level, by CRO or digital optimization enthusiasts.

III. User & UX research, tools and analytics:
Airlines in this group are more advanced when it comes to user research, analytics and digital optimization tools. 3 out of 4 do user research activities on an above-average level (Level 3). All 4 are above average in digital analytics (they do detailed funnel analytics, attribution modeling and cross-device tracking). The challenge for this group is that activities are sometimes still done for silo tests and optimizing micro metrics, rather than within a long-term, companywide optimization plan.

IV. Test quantity:
This group still struggles to do A/B tests and experiments at an above-average rate. 2 out of 4 airlines don't do testing on a regular basis. The other 2 airlines in this group do at least 5-10 tests every month.
Challengers need to be careful not to use tests as their main optimization activity, but rather use them for the validation of hypotheses only.

V. Process, budget and knowledge sharing:
Lack of organizational recognition for digital optimization and CRO is evident for Challengers. 2 of the 4 airlines don't have a budget for digital optimization activities (for the other 2 it's a part of the ecommerce budget). All 4 claim to have a digital optimization process, yet only 2 of them have it documented and structured.

NEXT STEPS FOR CHALLENGERS: **EMPOWER!**

Challengers understand the value of digital optimization and CRO but still struggle to get companywide exposure and support. CRO experts and their department managers need to be proactive in explaining the value of digital optimization to their key stakeholders.

Be transparent about experimenting and make case studies out of winning tests with clear ROI calculation. This will help you get the recognition and resources needed to take the next step – forming digital optimization and CRO teams and structuring activities and tests in a strategic optimization plan.

VISIONARIES

Visionaries are the largest group, consisting of 23 airlines. Airlines in this group are not Laggards (so their average score is above Level 2 across all areas) but are ranked higher in "Completeness of Vision" than "Ability to Execute" areas.

I. People and company support:
Visionaries have a clearer understanding of the potential and importance of CRO and digital optimization than Laggards and Challengers. Their average score is above Level 3 across People, Skills and Organizational support areas. 70% of airlines in this group claim to have a digital optimization or a CRO team in place. 4 even claimed to have Level 5 full-scale conversion teams. 40% of airlines in this group claimed to have top management support for digital optimization and CRO (at least Level 4). For comparison, none of the Laggards or Challengers claimed to have top management support and recognition for conversion optimization.

II. Skills and knowledge:
All 23 airlines in this group claimed to have a deep knowledge about conversion optimization (e.g., CRO, UX, analytics, content and copywriting). More than half (12 airlines) stated they even have advanced CRO knowledge (UX excellence, advanced analytics, conversion centered design) or better.

III. User & UX research, tools and analytics:
Visionaries have the means, but don't execute at the same level as Leaders or even, in some areas, as Challengers. Therefore, this area and test quantity are the two where they lag behind. 22% of airlines in this group still doesn't do systematic user research and user feedback activities, and 40% mostly use simple tools for such activities (e.g., simple user research tools, simple A/B testing tools).
One area really limits Visionaries: the Internet Booking Engine. 35% said their IBE makes it difficult to do A/B testing and experiments, while only 2 said their IBE is flexible and allows more complex experiments.

IV. Testing quantity:
This is the key area in which Visionaries need to improve. Limitations of tools and especially the IBE result in less than optimal execution of A/B testing and experimenting. Only 17% of airlines in this group do at least 5-10 A/B tests and experiments per month, and 40% in this group still test only on a project or ad-hoc basis.

V. Process, budget and knowledge sharing:
91% of Visionaries follow a digital optimization process, 70% claim it is documented and structured. 65% say they have a budget for conversion optimization. All but one share experiment results with broader commercial teams, 17% share results across entire organization.

NEXT STEPS FOR VISIONARIES: **ENABLE!**

Educate the IT team on the importance of experimentation to get the right tools in place. Implement an agile, modular Internet Booking Engine that supports different flows and instances and more complex A/B testing (like split path testing).
Consolidate development to support CRO activities and start building digital optimization teams (product manager, conversion specialist, analytics specialist, front-end & back-end developers).
Dedicate development resources for testing (out of your product development sprints). Start executing more user research activities to really understand your user's pain points. Once the proper tools and team are in place, increasing the number of experiments is a critical next step for this group as it has direct influence on faster learning, growth and ultimately innovation.

LEADERS

7 airlines were classified as Leaders. They are the elite digital optimization group. Airlines in this group are on average at Level 4 or higher in almost all areas. LCC airlines dominate this group (5 out of 7). There are 2 medium sized airlines in this group and the rest are large airlines. It's not a coincidence that big airlines dominate this group. The resources and expertise needed to build a CRO-centric organization can be an issue for smaller airlines. However, digital optimization should not solely be the domain of the biggest airlines. Even smaller airlines can advance to a higher level of digital optimization maturity with a smart and agile strategy. There are airlines in this group that achieved high CRO maturity and high experiment volume with a unique outsourcing approach.

I. People and company support:
Digital optimization and experimentation have become a part of the culture for these airlines. CRO, testing and experimenting are recognized as crucial processes on an organizational level. All Leaders claim CRO has top management support; 43% even said conversion optimization is recognized as a crucial activity by their organization (Level 5).
All Leaders have dedicated CRO teams in place with advanced CRO skills and knowledge. Roles like Conversion Optimization Expert, Senior Digital Optimization Specialist, and Data Scientist are common in this group. Most of the digital optimization teams are hybrid: a combination of internal digital optimization resources and dedicated outsourced CRO experts.

II. Skills and knowledge:
Leaders are pushing their CRO skillset to the next level.
They have advanced CRO knowledge (e.g., UX excellence, advanced analytics, conversion-centered design). Almost half (3 out of 7 airlines) of this group go even further when it comes to

CRO skills (e.g., persuasion techniques, conversion copywriting, advanced user data, BI and datamining).

III. User & UX research, tools and analytics:
Leaders recognize that understanding your users is key. They all perform regular user research and feedback activities, extensive UX research, and usability testing. More than half claim to do scheduled moderated and unmoderated user testing, customer struggle scores and prototype testing.
When it comes to advanced analytics, 1 airline claimed they use data science (e.g., predictive analytics, machine learning). All others perform advanced digital analytics and use special visualization tools. All Leaders claimed to use an advanced testing platform or have built their own tool for testing. 4 out of 7 airlines in this group claimed to have a completely (Level 5) flexible IBE that supports experimentation.

IV. Testing quantity:
A true Leader can be recognized by the number of experiments he runs. All but one of the airline digital optimization Leaders test and experiment on a larger scale (at least 5-10 tests per month). The best (71% of this group) do even more; they run 10 or more experiments every month.

V. Process, budget and knowledge sharing:
All Leaders follow a digital optimization process, 71% claim it is documented and structured. All Leaders have a budget for conversion optimization, 57% say it's a special dedicated budget just for optimization and experimentation. All Leaders share experiment results with broader commercial teams, 29% share results across entire organization.

NEXT STEPS FOR LEADERS:
SCALE, AUTOMATE, AND FOSTER A CULTURE OF EXPERIMENTATION

Even Leaders can take the next step, since digital optimization and CRO is about constant learning and growth. While CRO Leaders are the best among airlines, there is still a gap compared to the travel industry experimentation elite like Airbnb, Uber, Booking.com, Skyscanner or eDreams.

So, the real challenge for this group is how to do experimentation on an even larger scale and catch up with the travel elite. This is why we've provided special interviews and tips from experts who have studied how to build largescale experimentation programs. You can find them in the Test Quantity section.

Leaders need to "democratize" experimentation and work on decentralized organization to support experimentation and innovation on a large scale.

And yes, I understand most of the travel elite are companies who provide a digital product only and are basically tech companies. However, airlines can apply experimentation and CRO principles to their physical products as well.

And as you learned from Stefan Thomke in the intro section, true innovation will be enabled once airlines take experimentation from the digital & channel (UX) level to the product level.

KEY COVID-19 TRENDS – HOW CAN DIGITAL OPTIMIZATION AND EXPERIMENTATION MAKE A DIFFERENCE?

COVID-19 has changed our lives and how we behave, and it is changing our online behavior. We can see that the airline and travel industries were among those where the impact has been immense. The change is happening both in the physical and digital worlds, and a lot of "physical" activities (like shopping and meetings) are moving online.

If you didn't recognize the value of experimentation and digital optimization before, you will have to do so now. All the things we've been preaching here at Diggintravel about conversion optimization and UX have not changed.

What did change is this matters now more than ever!

Why?

Here is the list of key trends we see and why experimentation and digital optimization will have an even bigger impact now:

1. A focus on reducing costs and finding quick revenue streams will make conversion optimization even more important

In every crisis, airlines do two things: aggressively reduce costs and look for quick revenue uplifts. Conversion optimization impacts both cost and revenue. Higher conversion means more bookings and more revenue.
You do more with the same amount of traffic. However, higher conversion also reduces your

customer acquisition costs (CAC). Think of your paid campaigns (e.g., AdWords or Facebook campaigns) where you pay for every click, every visitor. Higher conversion means fewer clicks for booking to happen, so lower cost per booking.
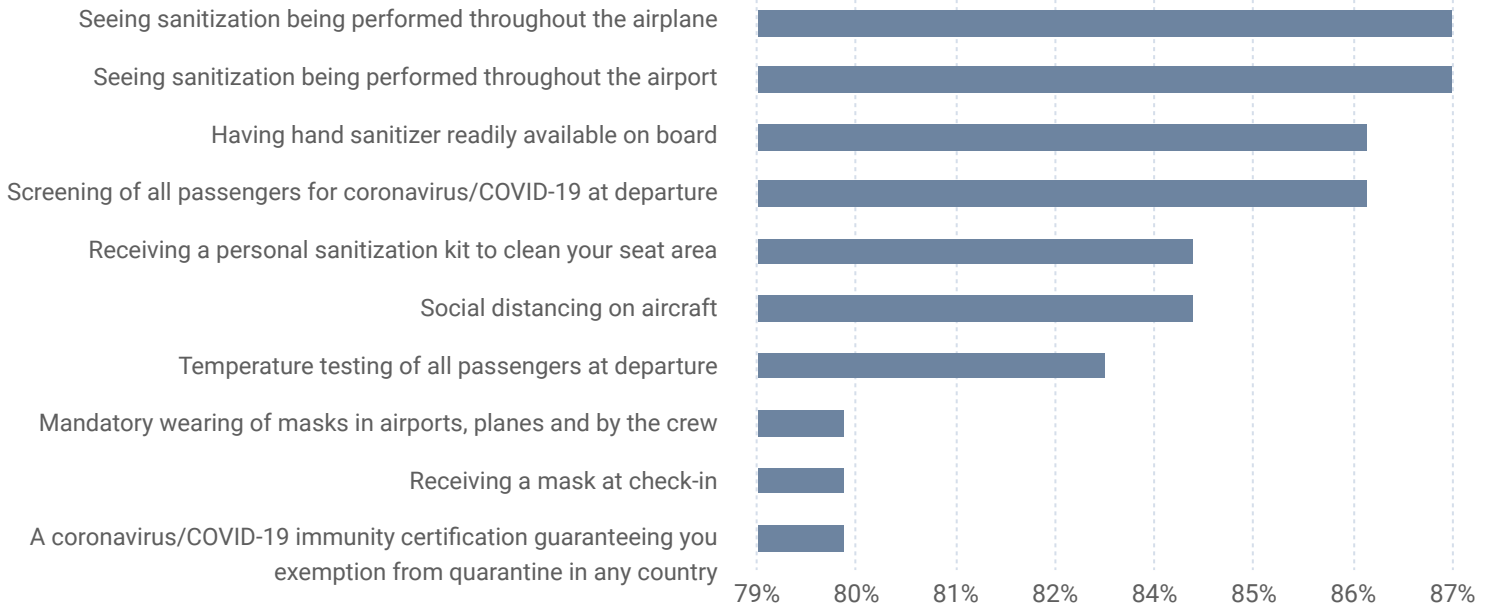
2. Understanding your users is key: Your "one-size-fits-all" approach won't work anymore

When your users eventually start thinking about traveling and booking travel again, they will have more fears than ever. They will want to know about hygiene, health situations, restrictions and guidelines. These fears will be different by origin (departure country / airports) and especially the destination (country / region) they will travel to. Fears will also differ by passenger demographics and purpose of travel. Furthermore, there is a possibility that the situation will change for each of the above combinations over time, as there could be more virus outbreaks in the future.

Conversion optimization is all about understanding your users' fears and removing friction by addressing them. You will have to understand those fears for each of your passengers, or at least key segments, and address them based on that. So, no more generic copy and messaging in your booking funnel.

However, based on our past research and experience, I can say airlines are not really good at this. In our 2019 Airline Digital Retailing research, **64% of airlines said they have the same booking path and experience for all customers.**

It would make me feel safer

Seeing sanitization being performed throughout the airplane

Seeing sanitization being performed throughout the airport

Having hand sanitizer readily available on board

Screening of all passengers for coronavirus/COVID-19 at departure

Receiving a personal sanitization kit to clean your seat area

Social distancing on aircraft

Temperature testing of all passengers at departure

Mandatory wearing of masks in airports, planes and by the crew

Receiving a mask at check-in

A coronavirus/COVID-19 immunity certification guaranteeing you exemption from quarantine in any country

This won't be good enough anymore. What you'll have to do is:

- Move from reactive to proactive digital analytics. This will allow you to see the "what" and find trends, anomalies and segments in your data. See Section IV (Digital Analytics) for more details.

- Do agile user research to understand the "why" behind trends, anomalies and segments. See Section III (User and UX Research) for details.

- Adjust different messages, communication, and even UX for each of the segments and test; start with rule-based personalization. See Section V (Testing Quantity) and our personalization guidelines for details.

3. Empowering experimentation to enable innovation

Experimentation is the key part of digital optimization. As you could see in the prior section, you'll need to see how your users think and test different things based on that. The companies that do this fast and on a big scale (as Stefan Thomke

calls it, "high velocity incrementalism") will have a competitive advantage on two levels:

- **Tactical level:** The scientific approach to analytics, user research and experimentation will allow you to proactively identify opportunities (and anomalies), which will result in increasing your conversion, reducing your customer acquisition costs and growing your direct channels. Starting with rule-based personalization and testing will enable your product and marketing departments to be much better.

- **Strategic level:** Once you integrate experimentation and optimization with your product and marketing, it will become a strategic asset. You will move from "channel and UX optimization" to product. When experimentation is emended on the product level, you'll be able to innovative faster. This will allow you to develop new digital products like subscriptions and new ancillary models, and even form new physical products and partnerships (see next item). You can find more details about experimentation at scale in Section V (Testing Quantity).

4. "Contactless and touchless" are opportunities to innovate and automate

One of the changes in our behavior is that people are looking for less physical contact. Airlines historically have struggled with digitalizing and removing physical contact from some of the touchpoints in the customer journey. Airlines can use this as an opportunity to take the next step with automation: building direct booking channels, increasing mobile app engagement, increasing web check-in usage, baggage drop, etc. There will be opportunities to automate, innovate and develop new partnerships (for example, concepts like home/hotel baggage pickup, airport food pickups, etc.). Again, digital optimization and experimentation will be crucial because:

- It enables agile development and testing of new innovative solutions and optimization of current ones.
- There will be new digital touchpoints (currently most of the focus is on websites) where optimization and experimentation will be required.
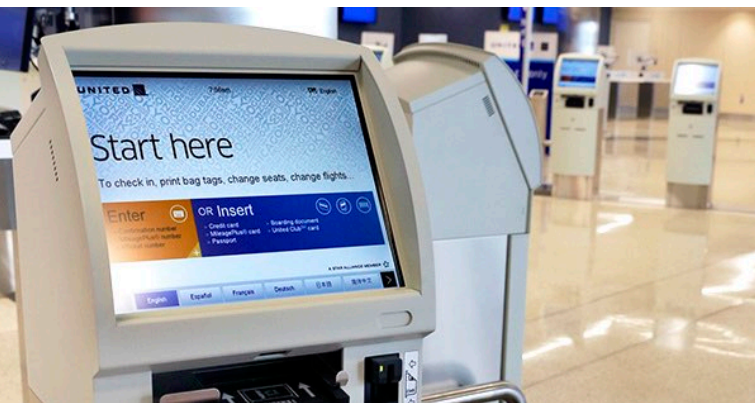
Source: Paxex.aero - updated software on the United app and kiosks should allow some passengers to print bag tags without ever touching the machines.

5. Plan for future growth now while downsizing your digital resources

Even before the crisis, most airlines had big technology debts and invested in technology less than other industries. Currently most airlines are reducing their costs, which has resulted in many airline digital experts losing their jobs. A lot of the roles that were insourced during the last few years will be gone. This is why airlines need to really think hard about how to organize now, while keeping in mind that resources will be needed again when the situation improves.

Having a strong vision and framework for optimization and experimentation is a must. This will enable you to see what your strategic resources are, what areas you can temporarily "freeze" or downsize, and what you'll need once you start to think about growing again. Finding agile ways to bring the needed skills and expertise into your organization will be key going forward.

You can see examples of various organizational models and insourcing/outsourcing tips in Section I (People), Section II (Skills), and Section VII (Organizational Support).

6. New groups of digital users are appearing

All trends are not bad. Traditional airlines that had routes in the pre-digital world historically relied on indirect distribution channels (travel agencies and other intermediaries). All of them have had increasing the share of direct ecommerce channel on their agendas for years. Now, even some of the groups that didn't use digital means before (think older population, regions where digital infrastructure and ecosystem were not developed) will most likely experience their first online purchases.

Not only will there be more people who will book travel online, there will also be more people who get used to new digital experiences (ordering food for delivery, other retail, etc.). This is an opportunity for airlines to innovate and try new concepts like airport food pre-order and pickup or onboard retailing.

By now, I hope you're convinced that experimentation and a scientific approach to digital development is the key to getting the most out of these new opportunities.

2020 AIRLINE DIGITAL OPTIMIZATION SURVEY – 10 KEY STATS

Some airlines get it (they understand the value of experimentation and digital optimization), while some still don't. It seems like you're either "in" on the new experimentation and data-driven movement or you still have a traditional approach to ecommerce and marketing.

Below, you can find *10 key stats from our 2020 Airline Digital Optimization Survey* that will show you this contrast:

47%

of airlines *ranked 2.5* or less across all 8 digital optimization categories vs the *43% of airlines that ranked 3.0* or more on average. *7 airlines* (the Leaders) all averaged *above 4.0.*

52%

of airlines *have digital optimization teams* in place.

51%

of airlines have a *documented and structured* conversion optimization process.

39%

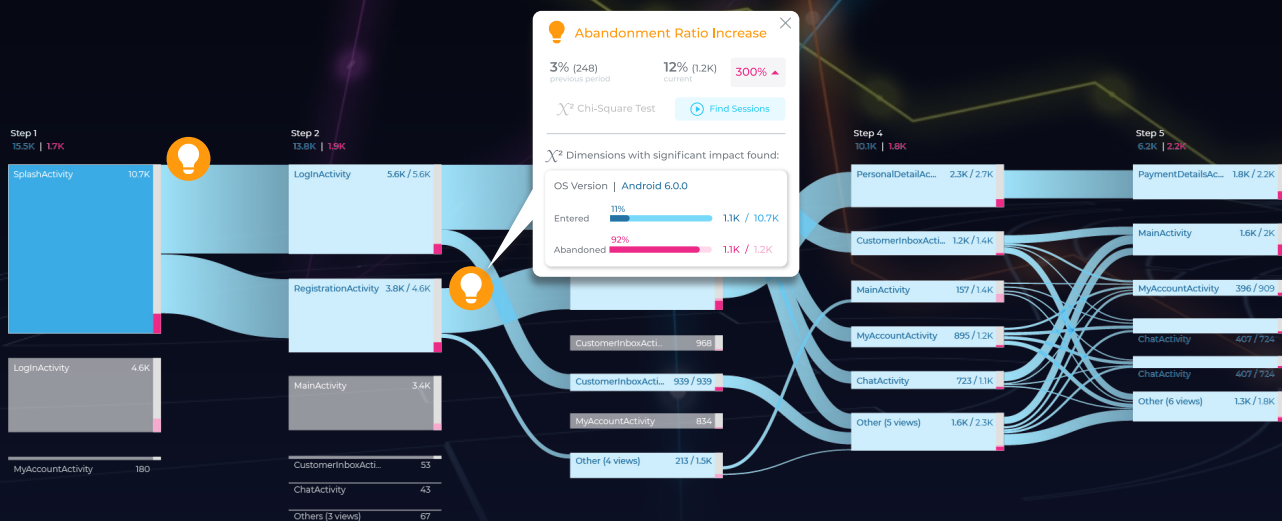of airlines still do *only ad-hoc and simple user research* activities.

49%

of airlines *don't run experiments at all* or only do them on an ad-hoc, project basis (on the other hand, 10% of airlines run more than 10 experiments per month).

43%

of airlines do *advanced digital analytics* and use visualization tools in addition to their digital analytics tool.

51%

of airlines *only use simple testing* and user research tools. 51% also claim that their internet booking engines (IBE) are not flexible enough to allow experimentation.

45%

of airlines say digital optimization and experimentation are *recognized on an individual or departmental level,* while 35% of airlines claim they have top management support for experimentation.

45%

of airlines said that they *don't have a budget* for digital optimization and experimentation.

75%

of airlines *combine digital optimization and personalization* activities within the same team. 51% say they use a personalization engine or a tool for personalization.

Glassbox

Augmented Journey Map™

Abandonment Ratio Increase

3% (248)
previous period

12% (1.2K)
current

300% ▲

X^2 Chi-Square Test   ▶ Find Sessions

X^2 Dimensions with significant impact found:

OS Version | Android 6.0.0

Entered	11%	1.1K / 10.7K
Abandoned	92%	1.1K / 1.2K

Step 1
15.5K | 1.7K

SplashActivity   10.7K

LogInActivity   4.6K

MyAccountActivity   180

Step 2
13.8K | 1.9K

LogInActivity   5.6K / 5.6K

RegistrationActivity   3.8K / 4.6K

MainActivity   3.4K

CustomerInboxActi...   53
ChatActivity   43
Others (3 views)   67

CustomerInboxActi...   968
CustomerInboxActi...   939 / 939
MyAccountActivity   834
Other (4 views)   213 / 1.5K

Step 4
10.1K | 1.8K

PersonalDetailAc...   2.3K / 2.7K
CustomerInboxActi...   1.2K / 1.4K
MainActivity   157 / 1.4K
MyAccountActivity   895 / 1.2K
ChatActivity   723 / 1.1K
Other (5 views)   1.6K / 2.3K

Step 5
6.2K | 2.2K

PaymentDetailsAc...   1.8K / 2.2K
MainActivity   1.6K / 2K
MyAccountActivity   396 / 909
ChatActivity   407 / 724
ChatActivity   407 / 724
Other (6 views)   1.3K / 1.8K

Mapping the Unknown

Glassbox Augmented Journey Map™ provides online marketers, product owners, digital CX analysts, IT and DevOps engineers with a complete and comprehensive multi-dimensional vision of all user journeys through their intricate website and mobile apps—automatically and in real-time!

No More Tagging!
No More Guesswork!

Glassbox AJM automatically tracks, maps and analyzes all digital journeys in real-time with **no need for prior tagging, coding or event configurations.**

Glassbox unique patented data-collection technologies enable the automatic capturing of all digital sessions and 100% of the data, including all user interactions from the client-side and the server-side on any platform – web or native mobile apps.

SEE ALL

Even when you're not sure what to look for, the AJM highlights important insights and flags issues for you to notice.

UNDERSTAND

Understand specific behavioral trends and their broad context. Visually slice-and-dice customer journeys to find correlations between dimensions and KPIs.

RESOLVE

Zoom in to relevant session replays from each node on the journey to quickly find error root-causes and fix them.

2020 SURVEY DETAILS

PEOPLE

WHO DOES CONVERSION RATE OPTIMIZATION (CRO) TASKS IN YOUR ORGANIZATION?

- **Level 1:** Online marketing specialist
- **Level 2:** Ad-hoc or part-time conversion optimization resource
- **Level 3:** Full-time conversion optimization resource (CRO specialist)
- **Level 4:** Small conversion optimization team (product owner, web analyst, designer, developer, CRO specialist)
- **Level 5:** Full-scale conversion team (in addition to the small team – UX researcher, copywriter, front-end developer, back-end developer, other experts)

By Size

Small   Medium   Large

By Type

LCC   FSC
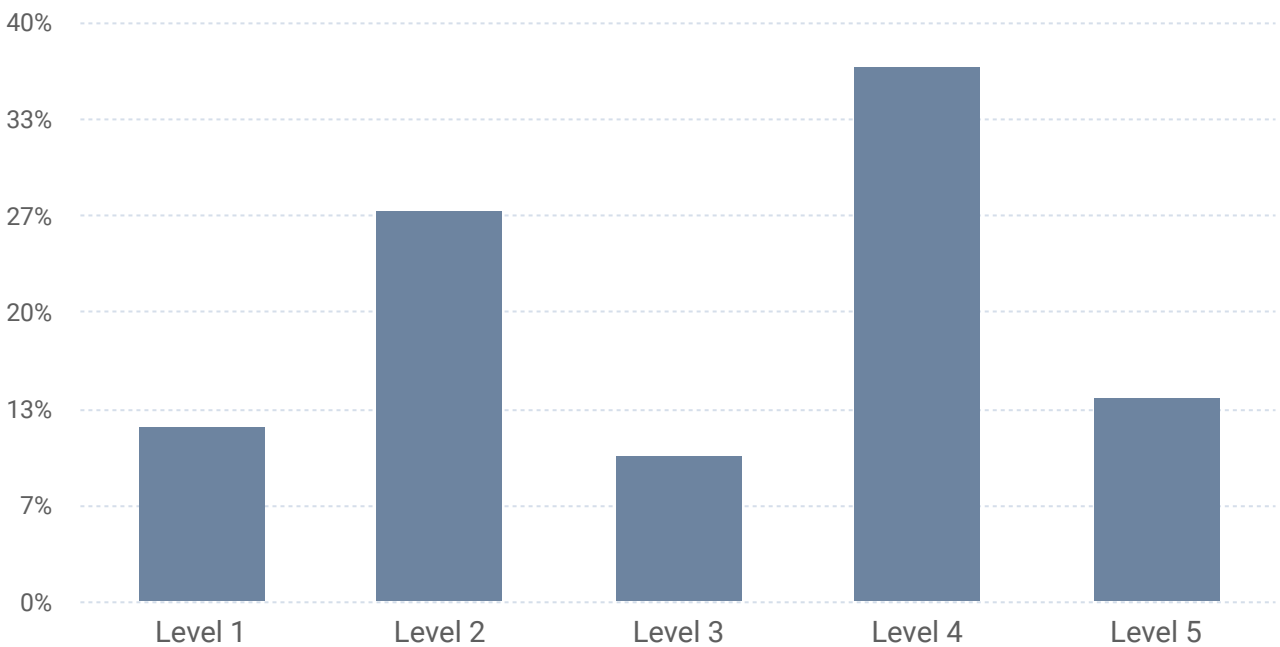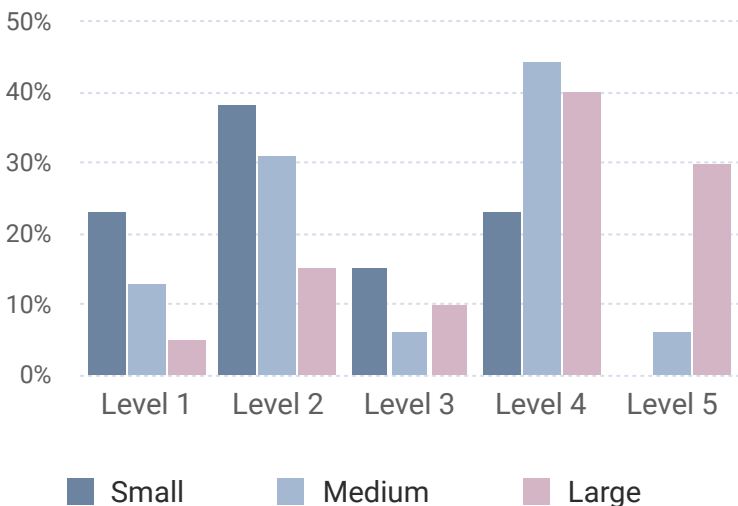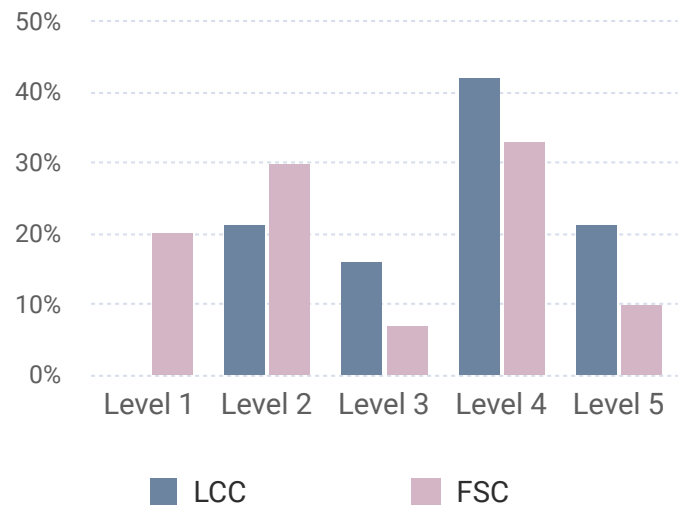
KEY STAT: AIRLINES ARE RECOGNIZING DIGITAL OPTIMIZATION AND TESTING REQUIRE A TEAM

We've finally gotten to a point when most airlines have digital optimization teams. **51%** of airlines either have a dedicated small conversion optimization team or a full-scale conversion team in place.

When it comes to digital optimization teams, there is a big difference between LCC airlines (63% of them have a dedicated team) and FSC airlines (only 43% have a dedicated CRO team).

However, on the other end of the spectrum, there is a significant share (39%) of airlines that still don't have specialized CRO resources in place. Having at least a dedicated CRO person is the first critical step airlines need to take if they want to build an optimization program. Most airlines that don't have one yet claim lack of resources (budget) as the key obstacle for having a full-time CRO person. Establishing first optimization scenarios, getting early wins and communicating the ROI of increasing conversion should help airlines get budget support for their optimization experimentation and programs.

Once you have a dedicated digital optimization lead in-house, you need to think about how to do the next step – build the CRO processes and a CRO team. Most airlines start with an internal CRO Lead and a specialized CRO agency to help them with CRO activities (like analytics, user research, and A/B testing).

Establishing a small, centralized optimization team (product owner, web analyst, designer, developer, CRO specialist) is crucial for a successful program.

Having a dedicated developer for experimentation has a huge impact on the number of tests you'll be able to run.

58% of the airlines who claimed to have a dedicated optimization team said their team is a combination of in-house and outsourced resources. 38% of airlines said they run optimization and testing (experimentation) completely in-house.

All Leaders have dedicated optimization teams. In order to take their optimization to the next level, they need to democratize experimentation and look at decentralized models that allow different teams to optimize and experiment on different digital products.

You can find different organizational models that will help you scale your experimentation in the *"Ask the Expert" section.*

WHAT'S NEW IN 2020 AND WHAT COVID-19 WILL CHANGE
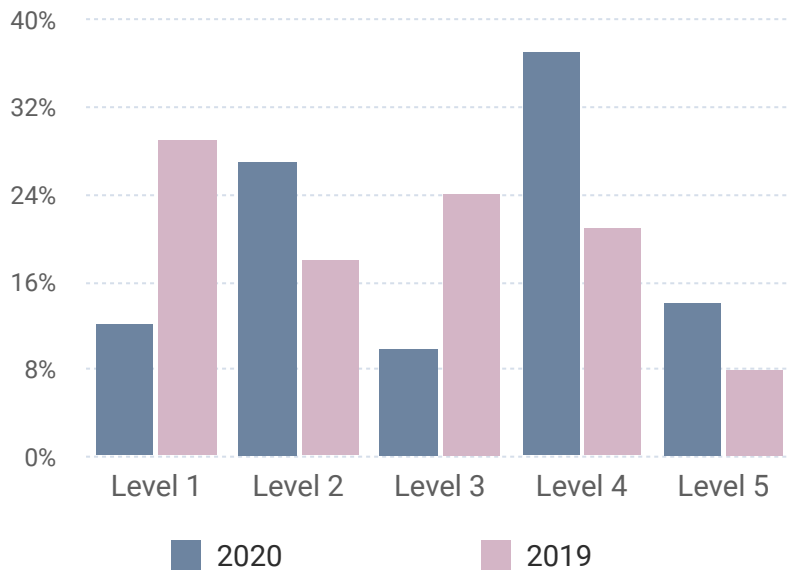
By comparing our 2020 results with last year's results, you can see that the main shift happened from Level 3 to Levels 4 and 5. This means more airlines are recognizing conversion optimization and the importance of having a dedicated optimization team. In last year's survey, 29% of airlines claimed to have a dedicated team in place; this share increased to 51% this year.

So, this was a good trend. The bad news is that due to COVID-19, the airline industry will probably take several steps back. We can already see many airlines reducing staff, including many digital and optimization experts. For the foreseeable future, airlines will need to do more with less, which means you'll have to be even more focused on innovation and optimization. As you saw in the chapter "KEY COVID-19 TRENDS – How can digital optimization and experimentation make a difference?", you shouldn't stop optimizing and experimenting. On the contrary, we believe we should do more during this time.

How can you do that with less staff, fewer resources and a smaller budget?

You need to map strategic assets (know-how, process, experimentation learnings, user research

data) and see what you can outsource when demand and traffic eventually return to your website. Even before COVID-19, 58% of optimization teams were a combination of in-house and external agency resources. So, you can outsource specialized skills (for example, advanced analytics, development, etc.); however, the strategic part (planning, managing, goals) of the testing and optimization process needs to be in-house. You'll also need to define better metrics and focus on things that have impact on the bottom line – no more optimization of partial, "vanity" metrics (see Chapter IV on Digital Analytics to learn more about that). Regardless of the organization and resources, you will need to be more agile and lean. You can look at more agile ways of doing user research – for example, how to do fast unmoderated testing via sites like usertesting.com or userzoom.com – or how to train existing resources to do three moderated sessions per month.

Explaining the value of experimentation to a broader team and building digital skills throughout your airline organization (versus having specialized digital roles and departments) might be a way to a leaner and more agile organization that will be better prepared for digital retailing in the future. You can see Wizz Air's CDO Joel Goldberg's thoughts on this in the ***"Ask the Expert" section.***
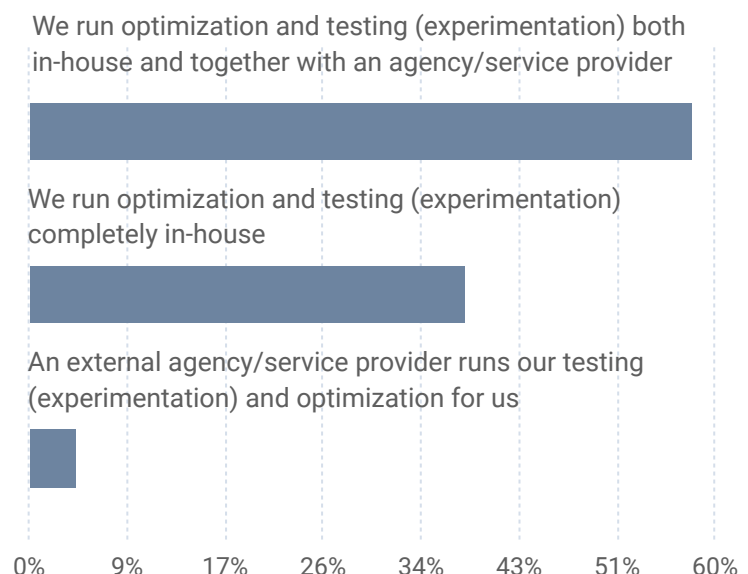
HOW CAN YOU SCALE UP AND DEMOCRATIZE YOUR EXPERIMENTATION?

Stefan Thomke

Author of the book Experimentation Works: The Surprising Power of Business Experiments and an authority on the management of innovation

How do you organize your experimentation teams? Do you start with top-down or bottom-up?

"I tell everyone who is thinking about this, just get started. If you have not started, you'd better do it, because if you don't do this, you're going to be at a major competitive disadvantage. In fact, in some businesses, if you don't develop a capability quickly, you're going to be dead.

So now, how do I get started? I think it has to happen both at the top level, but also at the middle level. You have to work it from both sides.

Here's what organizations typically do. They start out with what I call a **centralized organization**. That is, they usually give some of that capability to a small group, maybe a digital marketing group or some sort of group within the company. They become essentially a service provider to everybody else. If you sit somewhere else in a business unit and you want to run an experiment, you have to go to them, and they'll run the experiment for you."

This is like a centralized experimentation team?

"Exactly. It's a good way to get started. The problem with that, of course, is that it's difficult to scale because that central group becomes the bottleneck. There's really no ownership in the rest of the organization as well. Then what

organizations can do is say, okay, let's **decentralize** it."

The way this typically works is they will take that group, those people that know this well, and they'll send them perhaps into different businesses and they say 'Anybody in the organization can now run an experiment, and we'll provide people that will support you, teach you what to do.' To do that, of course, you need to train people. They need to understand some basic statistics. There's a lot of work to be done in order to get to that central form.

The issue with that, though, is you can scale it more quickly, but then it's so distributed that often there's no coordination between the different groups. So they may end up using different tools; they may have different rates of progress."
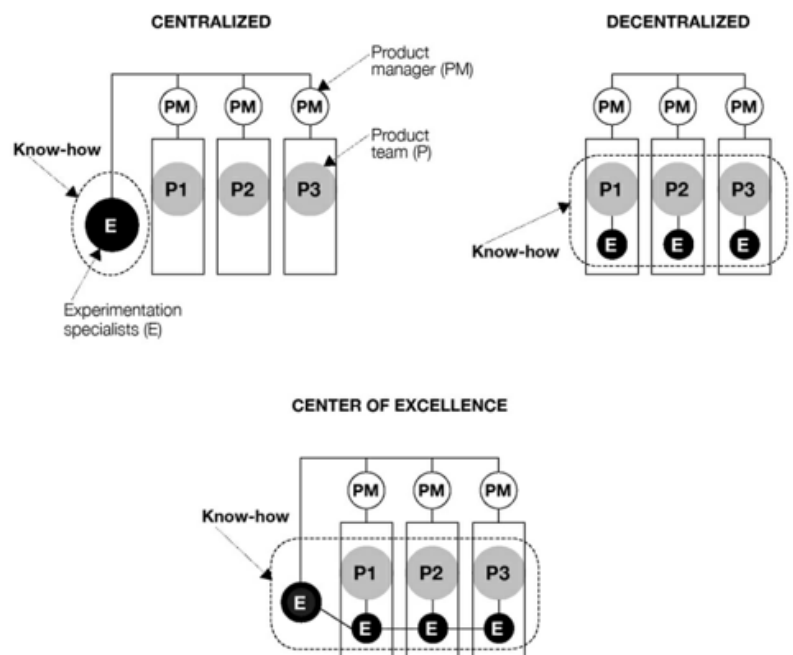
Source: "Experimentation Works", Stefan Thomke

And there may be some overlapping, right?

"Overlapping things, all of that. So you see all that going on, but you start losing the coordination.

Often what they do is they move towards more of a center of excellence model. The idea of a center of excellence model is you still have a core group within an organization that owns the capability, but their job is really to advance capabilities and give some support to the different businesses who still can do these things on their own. It's a mixed model between centralized and decentralized, but it takes away some of the disadvantages. Of course, that requires an investment, and I think that's where senior leaders come in."

"They have to rethink their roles as well in this approach. They need to understand how their own behavior, how their own leadership model affect how this is rolled out.

I see **three different roles for senior leaders** in this. **The first role** is they need to set a grand challenge that can be broken down into testable hypotheses. Their job is not to tell people which experiments to run; their job is to give them a direction so they don't just experiment willy-nilly, like running around like chickens with heads cut off. They need to get them a sense – for example, 'giving our customers the best possible online experience in the industry' or something like that, and something that can be broken down to testable hypotheses. So that's the first.

The second is that their job is to put in place systems, resources, and the kinds of organizational designs that I just described to allow for largescale experimentation to happen.

The third one is they also need to be a role model. They have to live by the same rules as everyone

else and subject their own ideas to tests. It means you cannot have an ego. You may have to walk into a meeting and display intellectual humility and not be afraid to admit it – like saying 'I don't know' or 'I think I'm going to be wrong about this' and have their own things subjected to these kinds of tests.

Francis Bacon once said –I love this quote, by the way – 'If a man will begin with certainties, he shall end in doubts. But if he will be content to begin with doubts, he shall end in certainties.' That's what I mean."

HOW CAN YOU BUILD AN AGILE AND LEAN DIGITAL AIRLINE?

Joel Goldberg
Chief Digital Officer (CDO) at Wizz Air

How do you look at Wizz's digital organization going forward?

"I think under the visionary leadership of our founder/CEO, Mr. Váradi, he's introduced a very effective and innovative forcing function within our airline, which is essentially he does not let us hire people to do manual work that should be done through an automated means.

This is sort of a forcing function. You can call it painful at times as we continue to grow, and we continue to grow fast. But it really forces not just digital, but really the entire airline to think about how we can be more efficient, how we can be more effective. We don't throw people at problems, so it forces us to try to figure out more innovative ways to solve for that.

So when we say digital workforce, I actually see that we're evolving to this company that everyone needs to be part of that digital workforce. Everyone needs to have a digital mindset, and everyone needs to understand and be able to think creatively about how to leverage digital in their particular area of the world or particular area of the business to become more efficient, and at the end of the day, more cost-effective.

I think the key is not just the growth in the number of software engineers and testers that we have, but it's actually **embedding this within the various functions and the close collaboration with the organization to where digital actually becomes**

blurred in with the rest of the org. There's not a digital organization and the rest of the business; it's actually everyone is digital."

I like this more multidisciplinary approach, and I think low cost airlines, for example like Wizz, actually have an advantage because you have a much more flat, lean organization. If you can embed this digital thinking/digital mindset that you're talking about in all functions instead of having a separate, huge digital unit to take care of the problems, I think that approach is the right one.

"Yeah, I agree. And I'm lucky; I came into the airline not too long ago. I think if you were to walk in our building and look around, you would see a lot of really young, bright, ambitious people. We're a very young company, both from an average age but also just in our mindset. I think we're very much an entrepreneurial company. We still have that spirit as if we were a startup even though we're a $3 billion airline.

That makes a difference. They're certainly some of the brightest people I've had the opportunity to work with in my career. Even people that aren't coming from a digital background, I think they're very digitally savvy. They really want to learn. They're very interested.

As I said, because we're forcing ourselves **to think more digitally by not hiring people as a quick solution, it's challenging all of us to really rethink the way we do not just automating, but really rethinking the way we actually do business. And that's continual**."

SKILLS AND KNOWLEDGE

# Q: WHAT IS THE CURRENT LEVEL OF CONVERSION OPTIMIZATION SKILLS IN YOUR ORGANIZATION?

- **Level 1:** Basic online and digital marketing knowledge
- **Level 2:** Basic conversion optimization, UX and analytics knowledge
- **Level 3:** Deeper knowledge about conversion optimization: CRO, UX, analytics, A/B testing, content & copywriting
- **Level 4:** Advanced CRO knowledge (Level 3 + UX excellence, user behavioral knowledge, advanced analytics including segmentation)
- **Level 5:** Experts in conversion optimization (Level 4 + conversion centered design, analytics experts, testing automation, personalization)

By Size

Small · Medium · Large

By Type

LCC · FSC
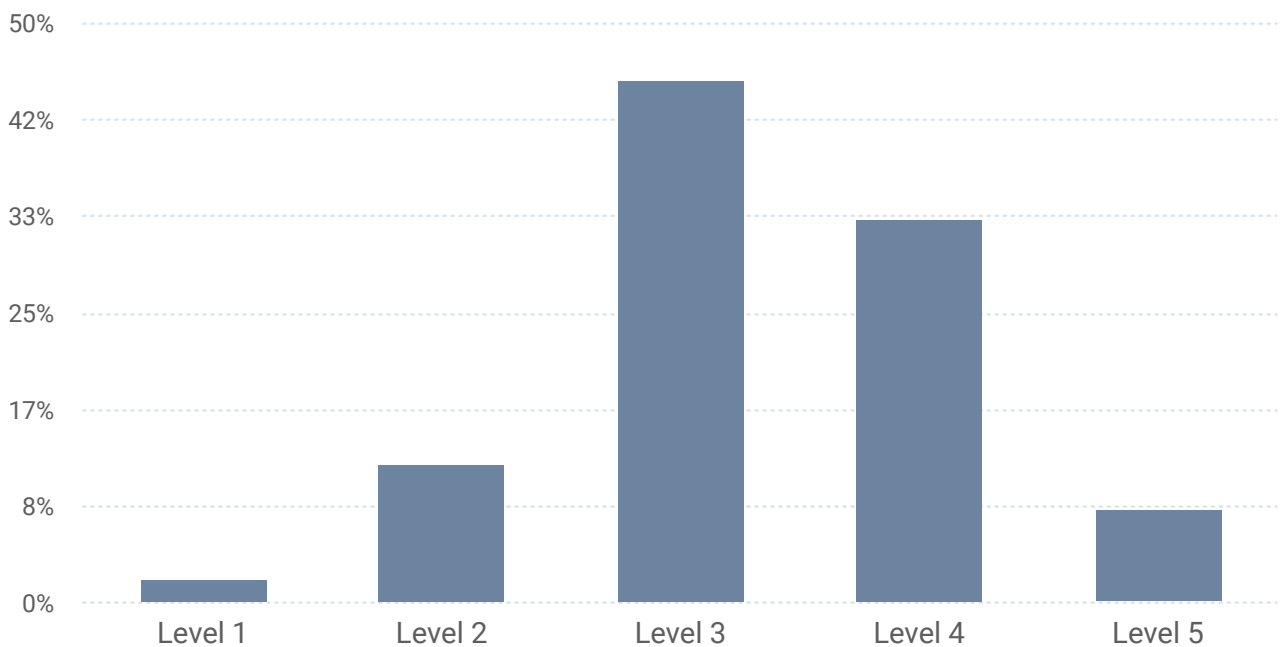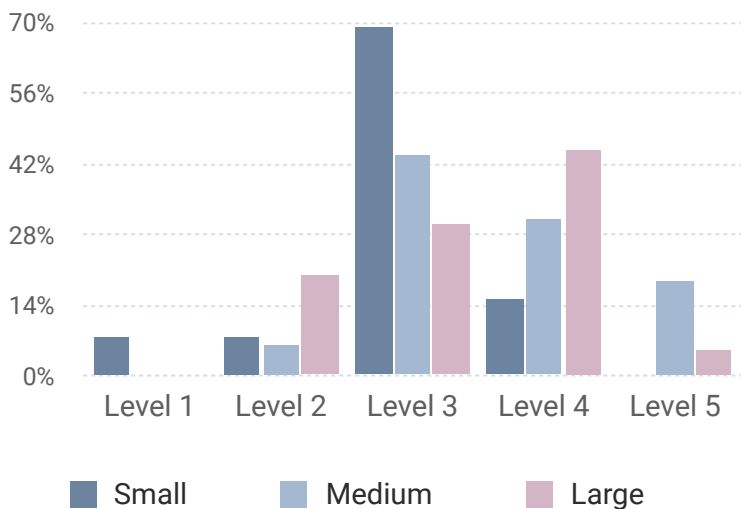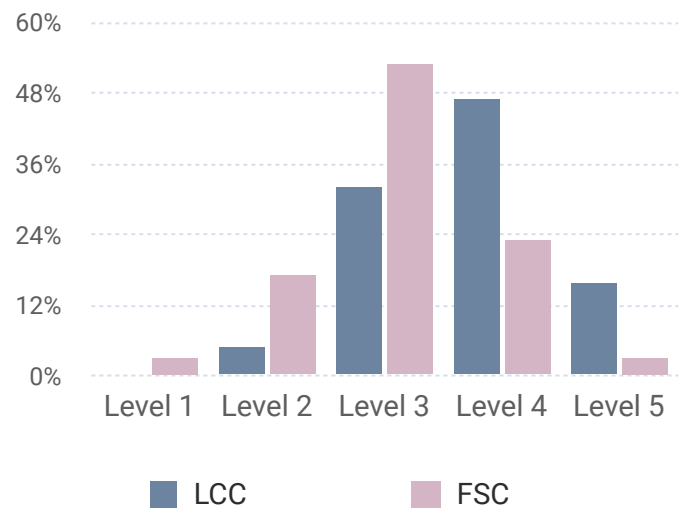
KEY STAT: AIRLINES CLAIM TO HAVE CONVERSION OPTIMIZATION SKILLS, BUT ARE LACKING IN PROCESS AND EXECUTION

86% of airlines claim to have specialized CRO and digital optimization skills within their organizations (Level 3, 4 or 5). The skills category was the category with the highest average score of all eight evaluated categories. Only 14% of airlines said they have merely basic online marketing knowledge or basic conversion optimization knowledge.

As in most categories, low-cost airlines are also more advanced when it comes to digital optimization skills, as 95% have specialized CRO skills in their digital teams. 63% of low-cost airlines claim to have advanced skills (Level 4 or 5), while on the other hand only 26% of traditional airlines said they have these advanced skills. We can also see that advanced skills are mostly the domain of the medium or large airlines, where teams are bigger and there are more specialized roles.

It seems like most airlines understand that digital optimization and CRO skills are a must to improve the digital experience and increase conversion in an ongoing and systematic way. However, when we look at other categories that show how airlines execute (for example, user & UX research activities or test quantity), we can see skills don't necessarily result in execution.
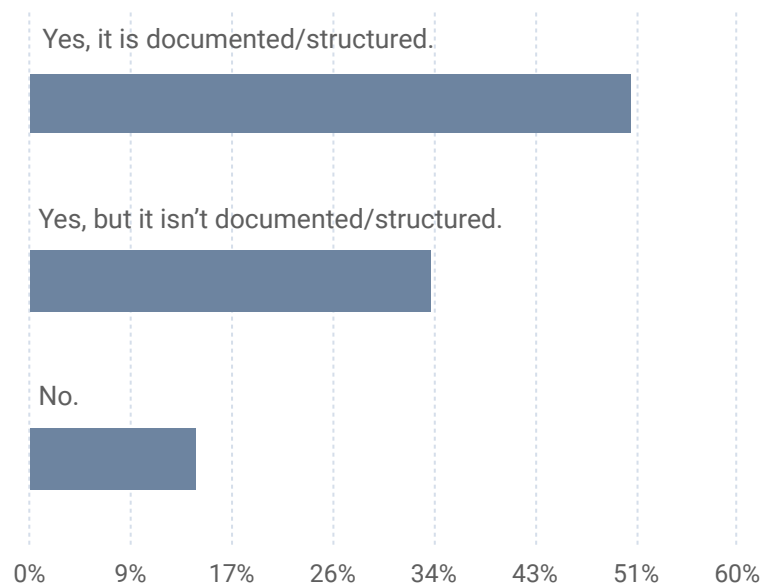
Conversion optimization requires different roles with different skills to work as a team with a joint goal and following a structured process.

It is a continuous process of analyzing data (analytics), understanding user behavior (user and UX research), optimization and testing. When it comes to this process, we still see a lot of room for improvement for airlines. Almost half of

airlines (49%) said they either don't have a process for conversion optimization, or the process is not documented and structured. This means although airlines have different skillsets and roles in their digital teams, they still work in silos.
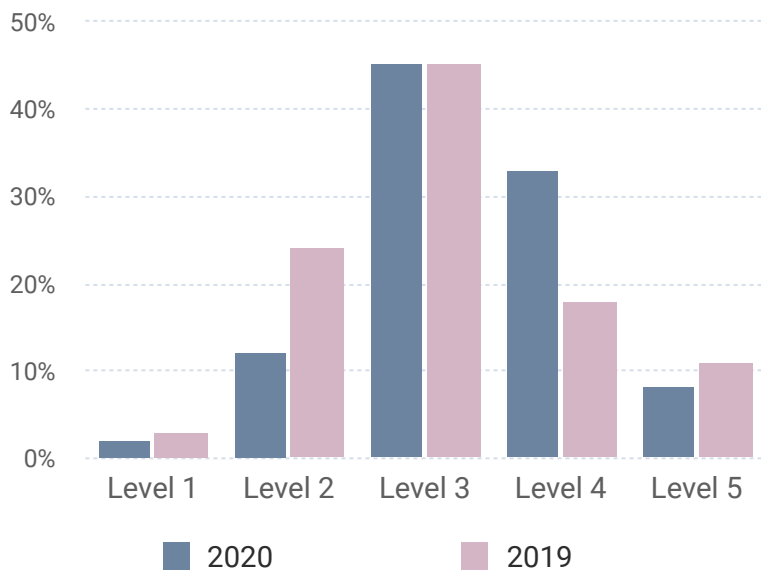
By implementing **a structured conversion optimization process** and building agile CRO teams, airlines can connect these different roles and skillsets, which will result in higher conversion rates and a better digital experience.

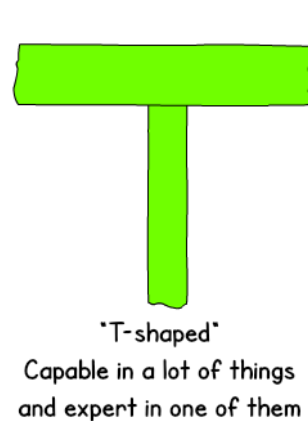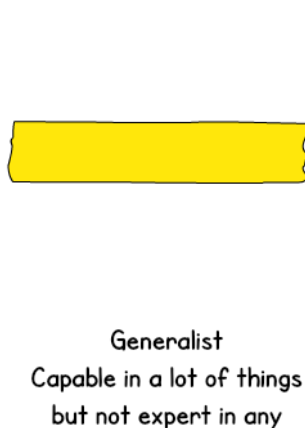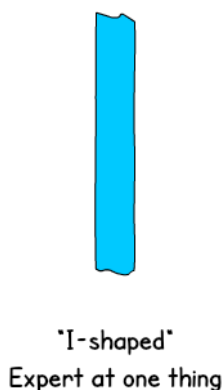### Does your team follow a process for conversion optimization?

Yes, it is documented/structured.

Yes, but it isn't documented/structured.

No.

0% 9% 17% 26% 34% 43% 51% 60%

WHAT'S NEW IN 2020 AND WHAT COVID-19 WILL CHANGE

However, smaller doesn't necessarily mean worse.

Establishing smaller, more agile CRO teams could be an opportunity for airlines to work leaner, faster and smarter.

A structured, data-driven CRO process can enable airlines to work smarter. To do that, airlines will need to take more out of the data (see Section IV), understand user behavior better (see Section III) and do leaner and faster optimization & testing cycles. To support this, airlines will need to "democratize" analytics, user research and experimentation.

By comparing the results of this year's and last year's surveys, you can see that the major change was the shift from Level 2 to Level 4 CRO skills. Compared to last year's survey, many more airlines claimed to have advanced digital optimization and CRO skills.

As we commented in the People section, these were definitely positive trends. With the COVID-19 situation and airlines reducing their digital workforce, some of these specialized skills will definitely be lost. At least in the near and mid-term, most airlines will probably need to do digital optimization and CRO with smaller teams.

This also means less specialization, which means airline digital experts will need broader digital optimization skillsets. Core airline digital professionals (for example, product owners) won't have the luxury of specializing in one discipline only, but will need to have knowledge in different domains (analytics, experimentation, UX research). GrowthTribe has coined the term **T-Shaped Marketer** to describe this, and you can find some elements of this approach in the **Ask the Expert piece with Wizz Air in Section I.**

If airlines manage to train, grow and empower people with a broader skillset, they will be able to leverage experimentation to innovate and solve complex problems.

"I-shaped"
Expert at one thing

Generalist
Capable in a lot of things
but not expert in any

"T-shaped"
Capable in a lot of things
and expert in one of them

Source: Jason Yip

HOW CAN YOU SCALE UP AND DEMOCRATIZE YOUR EXPERIMENTATION?

Stefan Thomke

Author of the book Experimentation Works: The Surprising Power of Business Experiments and an authority on the management of innovation

What do you think is a good profile for a person to work in experimentation?

"That's a really great question, and I think it ties directly back to the culture of experimentation. What kinds of people do you want to have in your culture that do this sort of thing? Let me give you some examples of the kinds of people that you need to do this.

First of all, you need curious people, because these are the kinds of people that will see failures not as costly mistakes, but as opportunities for learning. So you need to hire for these kinds of people. You need to also cultivate them so they don't come onboard and they're curious, and then once they're in an organization they're not allowed to be curious anymore. Curiosity is really important. One manager once told me that the way he screens for curious people in an interview is he counts the number of questions they ask him during the interview. It's a very simple KPI, he said. If it's zero, then chances are they're probably not very curious. That's the first one.

Then the second one, I think you need people who understand that data needs to trump opinions. If in doubt, you should follow the data, even when it clashes with the opinions. We as people tend to happily accept what we call good results that confirm what our biases are, but when we get a bad result, we thoroughly investigate it. Because we don't seem to believe it and so forth. So people

need to understand that. Now, that doesn't mean that there is no room for opinions. Of course opinions and intuition, all these things are important to write down a hypothesis. But when it comes to making decisions and results, we need to make sure that we do really understand the data. Again, it doesn't mean that we blindly follow the data; there may be strategic reasons why we don't do things. But let's please look at the data and understand the power of the data.

A third example – I think we need people who are ethically sensitive, because when you're running experiments, you also have an ethical responsibility. You should never run experiments that harm people. Sometimes it's not so clear-cut what's ethical and what's not ethical, so you need to create an environment where people discuss this and they challenge each other about the ethics of what they're trying to do. And when you get it wrong, the backlash can be severe, as we learned in Facebook and other companies. So having someone who has ethical sensitivity and also cultivating that ethical sensitivity I think is key in an organization."

Here you can see an example of the Digital Product Manager role at Delta Air Lines that combines different areas of digital optimization: digital analytics, segmentation, UI and user behavior analysis, working cross-departmentally to build experimentation & test scenarios.

Digital Product Manager – Checkout and Booking
Delta Air Lines
Mar 2019 – Present · 1 yr
Atlanta, Georgia

Delta is a world-class airline with 80,000+ employees around the world. The Global Distribution and Digital Strategy team is responsible for delivering digital experiences for Delta's online presence in 13 languages.

• Documented, pitched, and advocated for optimization tests for Delta.com and the Fly Delta App to improve conversion, improve offer take rates, and reduce errors
• Segmented customers and trip attributes to target optimization tests appropriately
• Used Adobe Analytics and Target to understand user behavior and experiment with UI changes
• Worked cross-departmentally to build requirements for tests (e.g. revenue management, IT, design, & marketing)
• Supported optimization test QA and UAT to ensure that tests were launched error-free
• Analyzed A/B test results to identify enhancements that could impact the bottom line
• Worked directly with Delta IT to implement successful test ideas in production

And here's an example from Qantas with CRO and digital optimization "embedded" into a front-end development role. You can see that understanding analytics and conversion optimization is certainly a required skill for a developer role.

CRO Frontend Software Engineer
Qantas • ⦿ Sydney, AU
Posted 1 day ago • 🕐 Be among the first 25 applicants

34 connections work here

Save   Apply

CRO Frontend Software Engineer

- Be part of a great team that delivers a great optimisation strategy across web, mobile and app
- Excellent opportunity to help Qantas become the world's number one Digital airline
- Permanent opportunity based at our Mascot Campus

We never stop researching ways to apply new digital technology that's right for the business. We're proud to say we're part of an innovative culture, but one that's thoughtfully considered by creating a culture of experimentation with a data-driven approach to continuously improve the customer experience and drive business growth.

We seek out people who want to push the boundaries of Digital Merchandising and will never stop imagining and creating solutions to complex problems.

You'll bring -
- Strong problem solving and troubleshooting skills
- Analytics experience and understanding of conversion optimisation
- Wide experience crafting and building software using the latest delivery techniques with A/B testing
- A real passion for quality, clean code and continuous improvement
- Highly dedicated ethos and attention to detail - expected to take very real responsibility for the work you're doing
- Experience of upskilling other team members plus technical capabilities on new platforms
- Experience working with technical and non-technical partners
- A test and learn mindset with curiosity, collaboration and care

Some of the technologies we're working on
- Adobe Target (Classic/Standard/Premium), Adobe Audience Manager, Adobe Experience Manager CMS, Adobe's Dynamic Tag Manager (DTM), and Adobe Launch
- HTML, Javascript ES6+, CSS, ReactJS, Redux, Swift and Kotlin

▪ PREMIUM
Applicant rank
Top 10% of 12 applicants

How you match ⑦
Criteria provided by job poster

Skills
- ✓ Search Engine Optimization (SEO)
- ✓ A/B Testing
- ✓ Conversion Optimization
- ✓ Content Management Systems (CMS)
- ⊘ Kotlin
- ⊘ Cascading Style Sheets (CSS)
- ⊘ HTML
- ⊘ JavaScript
- ⊘ Adobe Experience Manager (AEM)
- ⊘ Swift (Programming Language)

Job Details

Seniority Level
Mid-Senior level

Industry
Airlines/Aviation

Employment Type
Full-time

Job Functions
Analyst, Information Technology

USER AND UX RESEARCH

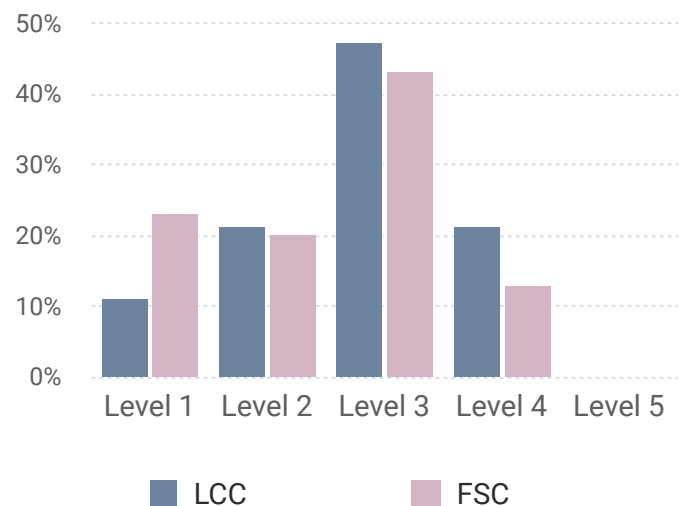# Q: WHAT USER AND UX RESEARCH ACTIVITIES DO YOU CURRENTLY DO?

- **Level 1:** Basic analytics and conversion reports; sales reports
- **Level 2:** Level 1 + advanced analytics reports, session recordings, simple A/B testing, heat maps and click maps, ad-hoc customer surveys
- **Level 3:** Level 2 + regular customer feedback and survey analysis, form analysis, occasional unmoderated or moderated user testing
- **Level 4:** Level 3 + scheduled moderated and unmoderated user testing, customer struggle scores, prototype testing
- **Level 5:** Level 4 + user testing at scale, biometric research, anomaly detection leveraging AI/ML

By Size

Small   Medium   Large

By Type

LCC   FSC
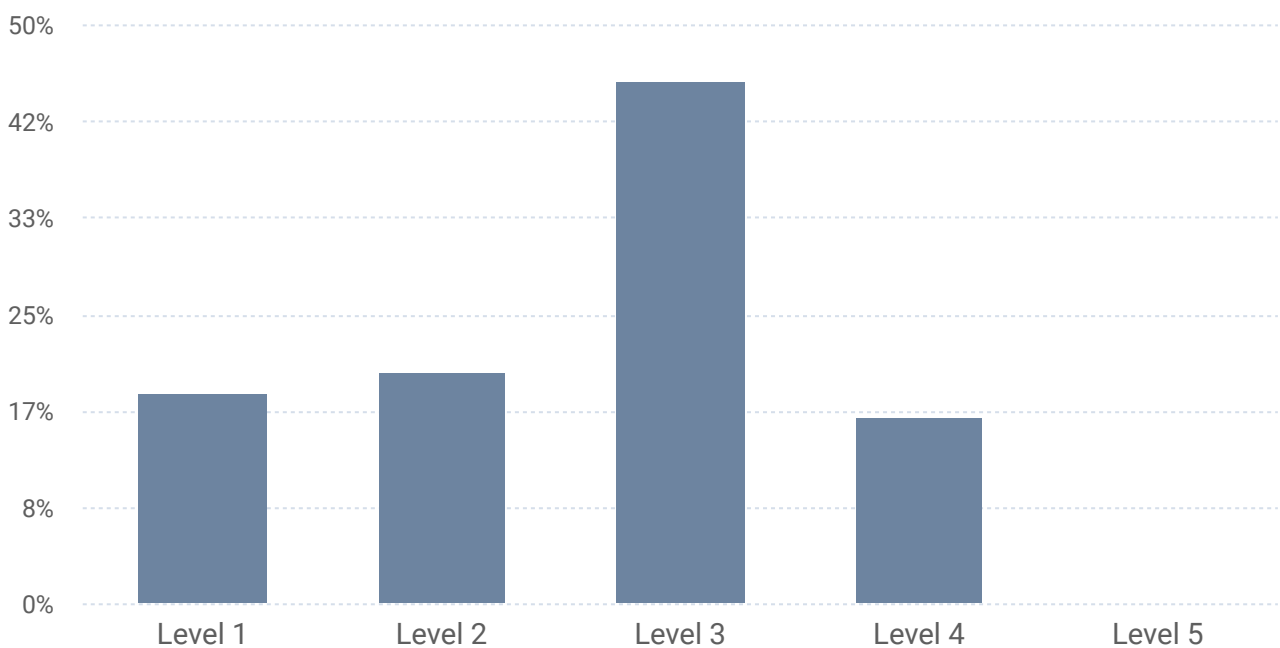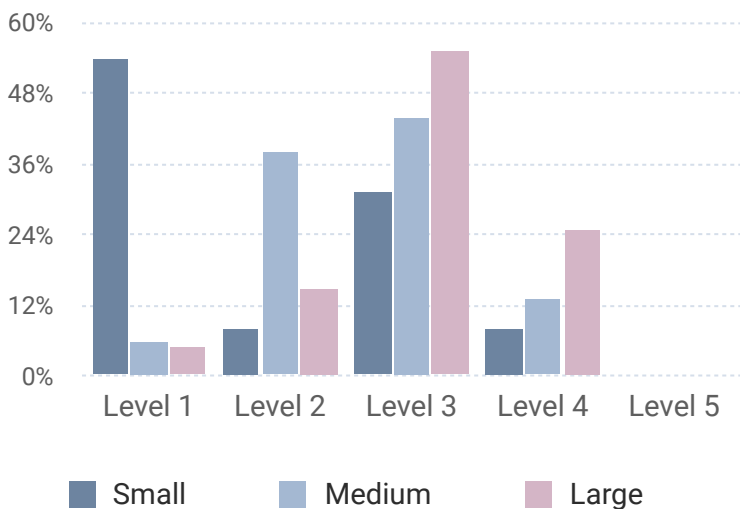
KEY STAT: USER AND UX RESEARCH IS THE AREA OF DIGITAL OPTIMIZATION WHERE AIRLINES HAVE MOST ROOM FOR IMPROVEMENT

38% of airlines from our survey still don't do any user research activities besides looking at data (Level 1), or they do simple activities to understand their customers (Level 2). Only 16% of airlines claimed they do systematic moderated and unmoderated user testing activities (Level 4). Test quantity and user and UX research were categories in which airlines scored lowest on average across the eight categories from our digital optimization framework, so there is definitely room for improvement.

In particular, small airlines really struggle here, as 54% of small airlines said basic analytics and reports are their only methods for user and UX research. Unlike in other categories, there is not a significant difference in user and UX research maturity between low-cost and traditional, full-scheduled airlines.

Currently, the majority of airlines (45%) do analytics, gather regular customer feedback and

perform survey analyses (Level 3). However, when it comes to unmoderated and moderated user testing, these are still mostly not part of the user research or they are only done occasionally (for example, for bigger website redesigns).

When we asked airline digital optimization professionals in which user research activity provided they see the most value, we got similar answers.

Airline digital optimization experts rely on **quantitative (data) activities** to get user behavioral insights. Digital analytics (86%) and A/B testing (67%) were by far the most popular user and UX research activities.

What user research activities help you the most to understand your users?
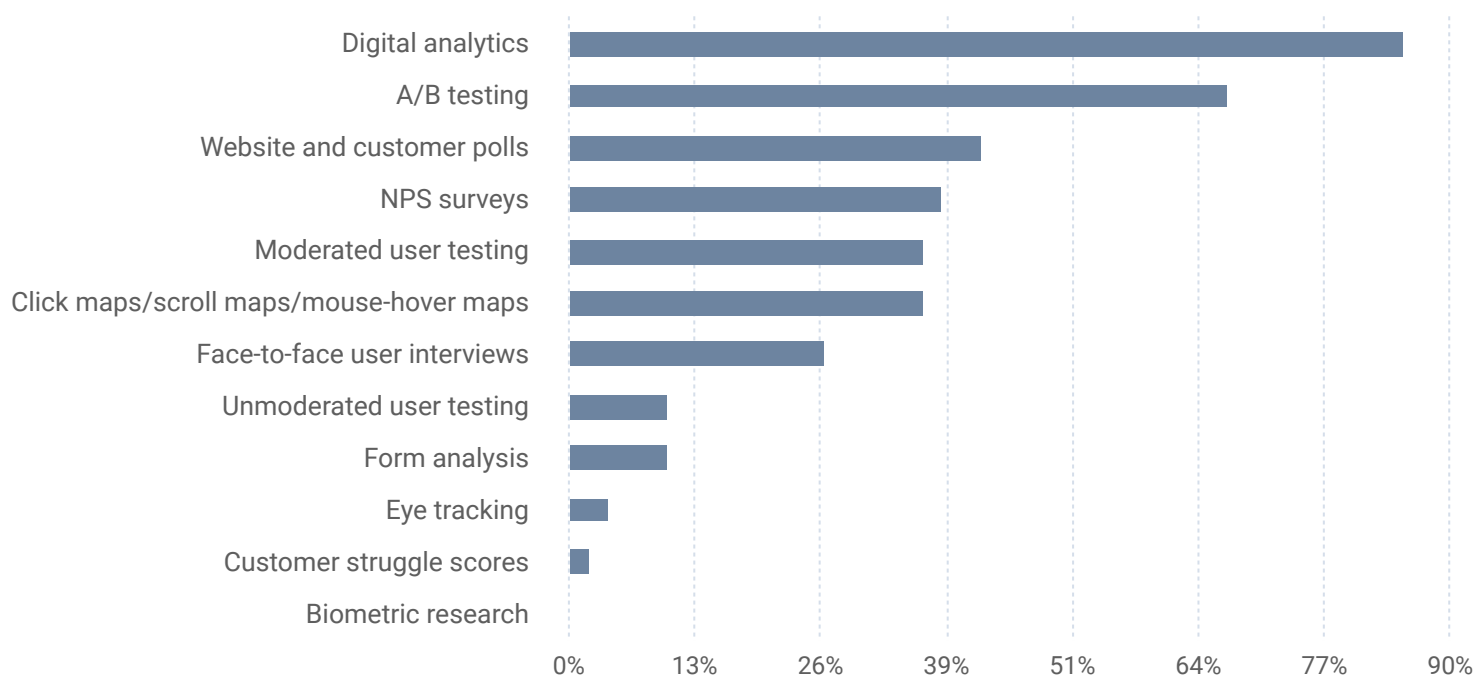
WHAT'S NEW IN 2020 AND WHAT COVID-19 WILL CHANGE

We renamed the "Activities" category to the "User and UX research" category and modified the survey questions in 2020, so we cannot provide a year-on-year comparison for this category.

However, what we can identify is that **"User and UX research" is an area of digital optimization where COVID-19 will have the biggest impact.**

Everybody is speculating about how user behavior will change because of COVID-19, but you really shouldn't rely on guesses and assumptions. Now more than ever, agile and ongoing activities to understand your users' behavior will matter. As we described in our introduction of this paper, a one-size-fits-all approach will not work anymore. You'll need to understand your users' fears and motivation and adjust your messaging and UX based on that.

We see the following three areas as opportunities for airlines to understand user behavior better:

1. Go beyond quantitative data: Our survey shows quantitative methods are still the most popular among airlines. However, quantitative methods tell you that something is happening (the trend, the WHAT) but don't help you understand the WHY. Airlines need to do more agile, qualitative user research activities to complement quantitative ones. See the "Ask the Expert" section with a Google UX expert for more on that.

2. Go from project, quarterly-based research to ongoing agile research: Our survey shows that most airlines do some of the important user research activities (like moderated and unmoderated testing) on an occasional, project basis. Airlines need to decentralize and democratize user testing and allow more agile user testing.

You can learn more from our past case study on how Ryanair did exactly that here: https://www.diggintravel.com/ryanair-ux-research/

3. Leverage technology and AI for detecting anomalies and generating insights out of your existing digital data: As with other categories, airlines will have fewer resources to do user research. You'll have to do more with less, so this means you'll have to be smarter with your analytics and take more out of your existing data. One area we suggest that airlines explore is leveraging artificial intelligence to generate user insights out of your existing website data. By using machine learning and AI, airlines can automate some of the tasks (generating insights, identifying anomalies) and go from a reactive to proactive analysis of user behavior trends.

See the "Ask the Expert" section with an expert from Glassbox to learn more on that.

DATA AND ANALYTICS ARE NOT ENOUGH TO UNDERSTAND YOUR USERS

Anna Potanina
Mobile User Experience and Conversion Specialist at Google

Anna, you and your team at Google have performed more than 600 UX, mobile and CRO audits. What is one common thing that you notice in the organizations or the companies or your clients that do CRO right?

"The really successful companies that I saw don't do just data testing. Not just A/B tests. They also always do qualitative methods, and the user research and user voice has equal say along with the data. I think that is super, super important.

It's usually UX design doing those things, but the higher up you get in the corporate hierarchy, the closer you are to the C-level, the more data stakeholders acquire. [The best companies] are using this qualitative data to report up to C-level stakeholders. You can tell really powerful stories not only with data, but also by building empathy with the end user, by showing the quotes or even short videos. This is what we encourage companies to do after the user labs, to take the videos of the users and to do a short video of the most powerful 'aha!' moments, if we can call it that, and send them to the C-level and use them as a way to report as well.
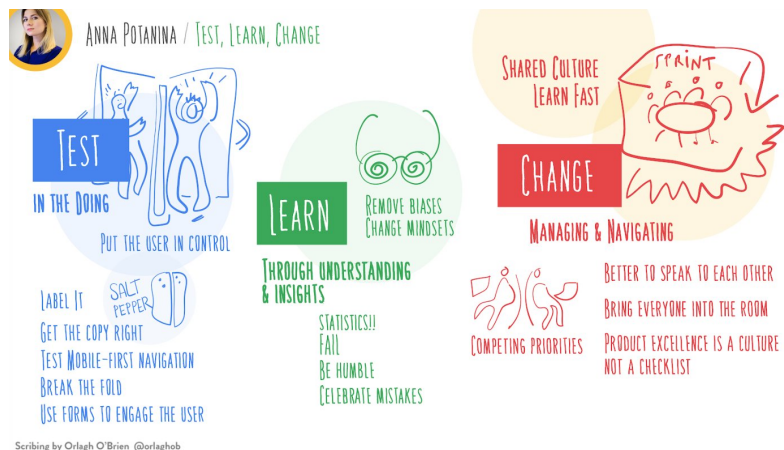
So the qualitative part should have an equal say as well as the quantitative methods. It's really easy to fall into looking into just data. Recently when I was doing the certification with Nielsen Norman Group, they were calling this affection for quantitative data 'data fetishes' or 'corporate

cocaine.' Because again, it's easy, right? It's the numbers, and we're used to thinking that data doesn't lie. But then data only shows us what's going on, but why is the qualitative part of things. You can only answer the 'why' by watching people."

What is your personal favorite UX research method?

"Usability testing I would say is one of the most powerful, to my personal preference. Watching people using the product helps you to first of all identify low-hanging fruit, maybe some burning issues, something that you really need to fix now. But it also helps you to come up with some ideas, and maybe ideas for further research and exploration.

So it's kind of both; you can have strategic projects as an outcome from this – 'We probably need to look into this, do a design sprint on that, ask for additional research on this' – but you also can have a roadmap of really tactical things to change right now."

Anna Potanina / Test, Learn, Change

TEST in the doing
Put the user in control
Label it / Salt pepper
Get the copy right
Test Mobile-first navigation
Break the fold
Use forms to engage the user

LEARN through understanding & insights
Remove biases / Change mindsets
Statistics!!
Fail
Be humble
Celebrate mistakes

CHANGE managing & navigating
Shared culture / Learn fast / Sprint
Competing priorities
Better to speak to each other
Bring everyone into the room
Product excellence is a culture not a checklist

Scribing by Orlagh O'Brien @orlaghob

HOW TO "SEE" AND UNDERSTAND DIGITAL USERS BY LEVERAGING YOUR EXISTING DATA AND ARTIFICIAL INTELLIGENCE

Hanan Blumstein
GM APAC & Chief Value Officer at Glassbox

Retailers and the FMCG industry have done in-store shopping analysis and customer research for years. Why do you think we still aren't analyzing online customer behavior so systematically?

"While in-store analysis can be based on observing the customer, **the digital customer is 'unseen.'**

I believe there are two main challenges:

1. Data complexity, which doesn't allow companies to extract enough information to fully analyze customer behavior but only to evaluate behaviors on individual products or process, attempting to improve a specific conversion rate.

2. Lack of dedicated resources to analyze collected data. In-store shopping benefits from [a] dedicated analytics team, but often this is not the case for digital shopping channels."

What are the key challenges when trying to understand what's happening on our digital storefronts? Is it people, tools, data or something else?

"I see four main challenges: First, lack of information about the shopper. Second, inability to correlate purchase (booking) history with the intent (digital). Third, lack of relevant data as not all websites are written considering analytics, so many of their elements and technologies are not data-optimized. Fourth, customer struggles. In many cases, customers find exactly what they were looking for at a price point they are prepared to pay and are willing to finalize the transaction; then they encounter a technical issue, a UX issue, or any other struggle that prevents them from finalizing the transaction."

Our research shows that many airlines still struggle to understand what's happening in their booking funnel. What are best practices for doing customer journey mapping?

"It begins with mapping of the booking funnel with one or more entry points and exits. Then airlines need to identify various products (core ticket, ancillary) that can be offered in the booking funnel, and how they can affect the overall conversion. The next step is to analyze the booking funnel and digital experiments across different segments (for example, identify differences in the experience in device types, OS, browser, etc.). Finally, airlines need to identify key monetization elements to help prioritize specific flows and use A/B testing to test and understand different elements and their effects."

ASK THE EXPERT:

It seems airlines have tons of data, especially digital data, almost to the point that it seems people are overwhelmed by it. How can artificial intelligence, automatic insights and anomaly detection help?

"AI can help crunch all data for specific use cases: user shopping behavior, fraud analysis, re-targeting, personalization, NLP and [it can] even make recommendations on how to change the site to improve conversions.

By leveraging AI and machine learning, **we can generate automatic insights**. These insights help us perform effective research by rapidly identifying the common patterns/dimensions that could have contributed to the drop-off in the airline booking funnel at certain steps.

At Glassbox we also use AI to **help airlines with anomaly detection**. The main goal is to remove eyes from a static screen and a**utomatically alert airlines when something is out of the norm**.

By doing this, analysts can focus on others tasks and be more productive in other areas while the system is constantly performing checks to guarantee the experience, conversions, errors and many other aspects of the site are functioning correctly.

So, we help airlines reduce the amount of time invested in manual analytics tasks and help them spend resources on strategic initiatives instead."
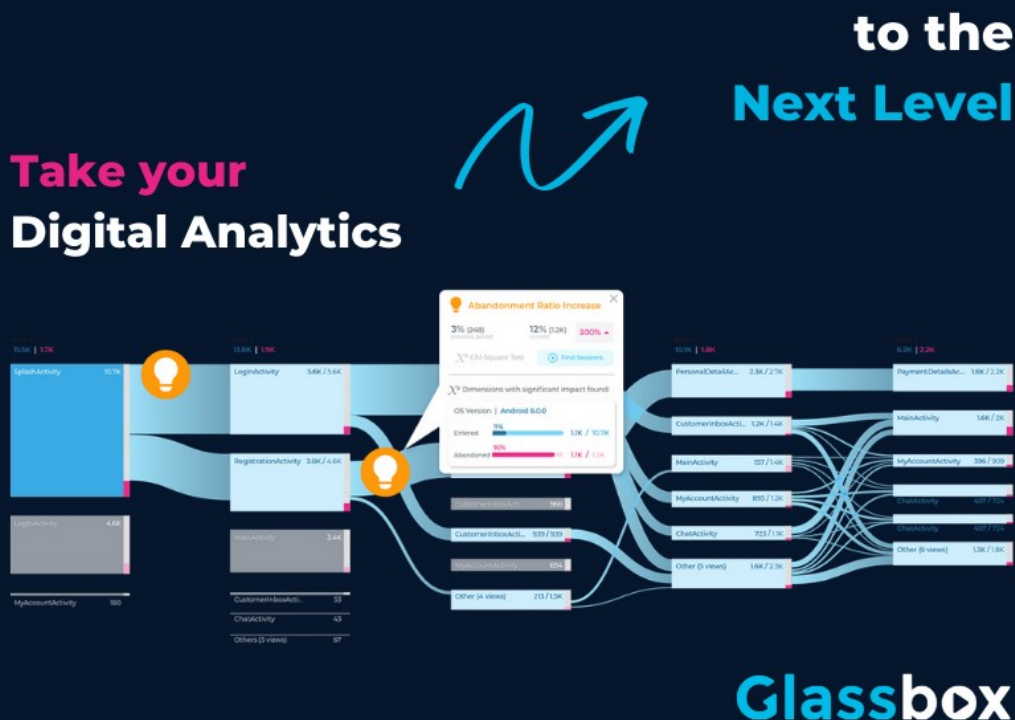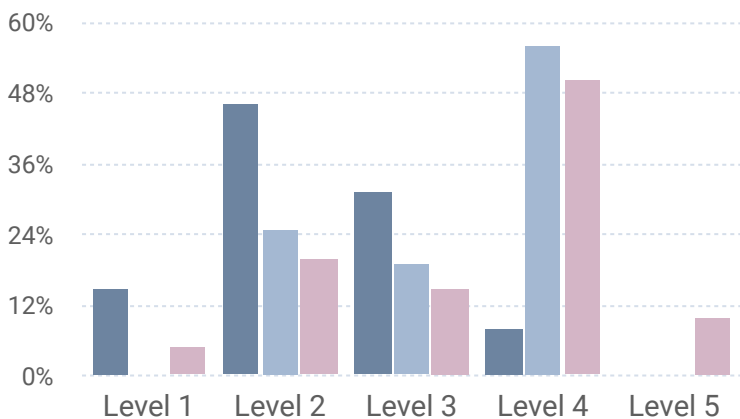
DIGITAL ANALYTICS

# Q: WHAT KIND OF WEB & CRO ANALYTICS DO YOU DO?

- **Level 1:** Basic web analytics (e.g., standard Google Analytics reports)
- **Level 2:** Level 1 + advanced web analytics setup (e.g., Enhanced Ecommerce for GA, custom goals, events, metrics and simple funnel reports)
- **Level 3:** Level 2 + detailed funnel analytics, attribution modelling, cross-device tracking
- **Level 4:** Level 3 + advanced tools for visualization (e.g., Google Data Studio & BigQuery, Tableau, Qlik, Power BI)
- **Level 5:** Level 4 + data science (predictive analytics, machine learning with R or Phyton), anomaly detection leveraging AI/ML
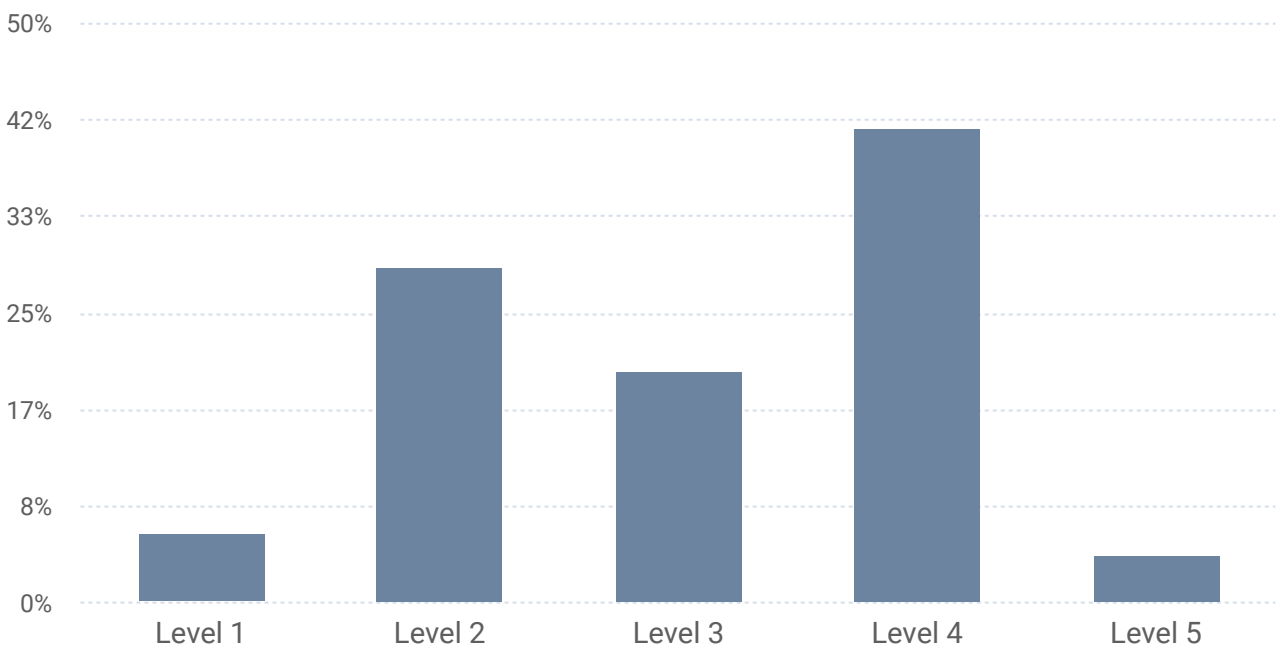
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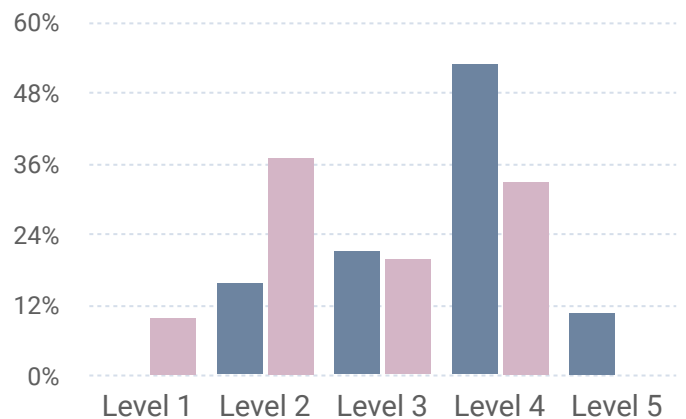
KEY STAT: AIRLINES ARE INVESTING IN THEIR DIGITAL ANALYTICS CAPABILITIES, WITH LOW-COST AIRLINES AT THE FOREFRONT

45% of airlines from our survey claimed they use advanced visualization tools and reports in addition to their main web analytics platforms (Level 4 or Level 5). On the other hand, 35% of airlines still mostly rely on core web analytics reporting only (Level 1 or Level 2).

You can do a lot of digital optimization reports and analysis with analytics platforms like Google Analytics and Adobe Analytics. However, they have their limitations when it comes to visualization and identifying trends.

When it comes to digital analytics, we see a big gap between low-cost carriers and traditional, full-scheduled airlines. 63% of LCC airlines are at advanced maturity with their digital analytics (Level 4 or 5), compared to only 33% for FSC.

Similarly to other categories, smaller airlines lag behind when it comes to digital analytics maturity. 62% of small airlines use basic web analytics reporting, with some additional setup like goals, custom events, or simple funnel reports (Level 1 or 2). This share is only 25% for medium and large airlines.

Google Analytics remains the most popular digital analytics platform among airlines. It's followed by its enterprise version – Google Analytics 360 – in second place. Adobe is the other platform used by airlines for digital analytics.
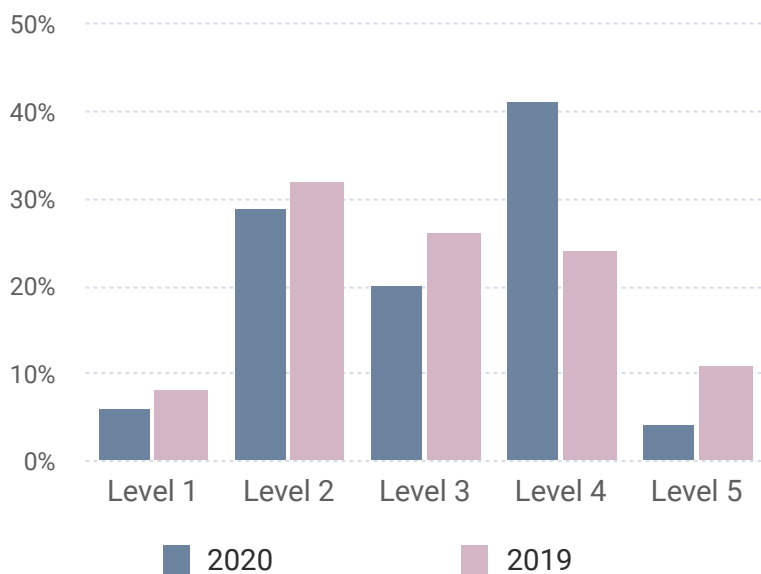
Google's solution for mobile analytics, Firebase, is the most popular solution for mobile and app digital analytics. Some airlines (mostly large airlines) report using both Google and Adobe platforms and some other specialized solutions (e.g., for mobile).

What is your primary web analytics platform?

WHAT'S NEW IN 2020 AND WHAT COVID-19 WILL CHANGE

| | 2020 | 2019 |
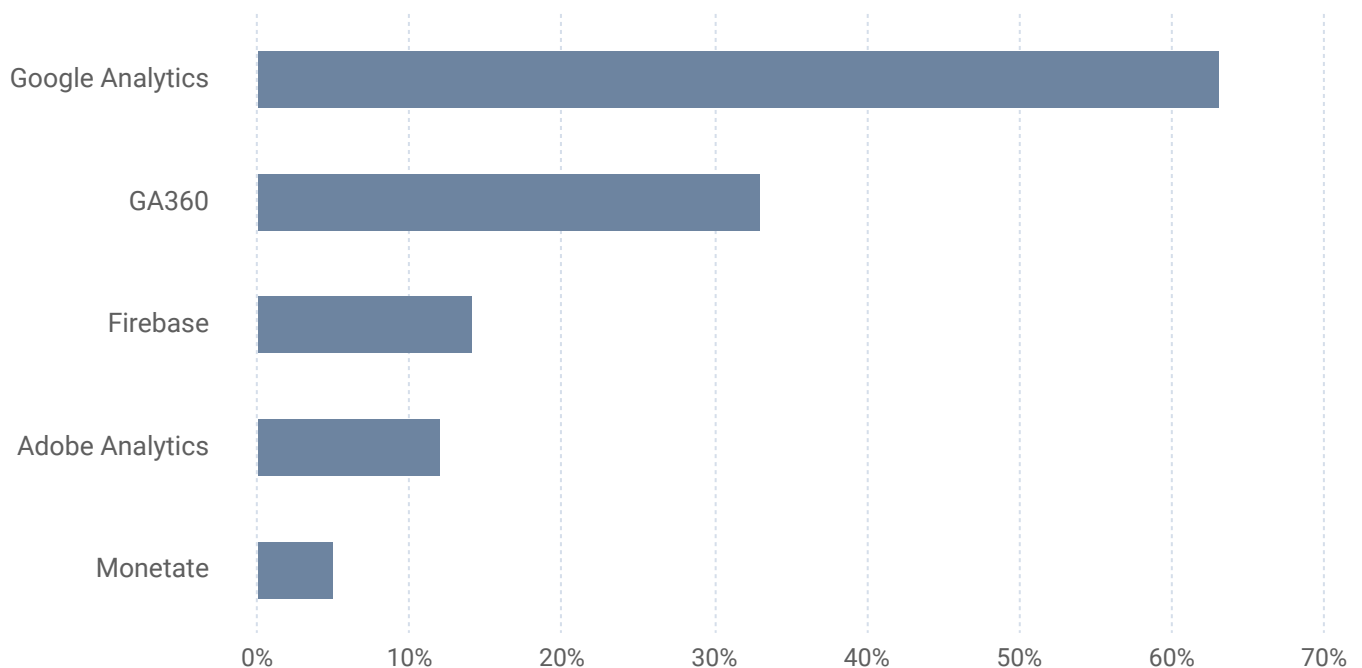
We saw a positive trend in our survey when it comes to the maturity of airline digital analytics. Compared to last year, we saw a significant increase in airlines with higher digital analytics maturity (45% of surveyed airlines were at Level 4 or 5 in 2020, compared to 35% in the previous year). A negative trend was that the share of airlines with below-average maturity (Level 1 or 2) still remains high (it even increased to 40% in this year's survey, from 35% the year before).

However, similarly to other areas, airlines will probably have fewer resources for digital analytics in the short term. Unfortunately, digital analytics challenges for airlines will not decrease, but rather increase. As we described in our introduction of this paper, a one-size-fits-all approach will not work anymore.

Not only will you need to understand your users' fears and motivation and adjust your messaging and UX based on that, but you'll also need to do it differently for different user segments and different scenarios.

This always starts with your data and digital analytics: **identifying segments, trends, anomalies and opportunities.**

The same mantra of **"doing more with less"** that we suggest for other areas will have to apply to digital analytics as well.

We see the following three areas as opportunities for airlines to leverage data and digital analytics better:

1. Define the "right" metrics to measure and optimize things that really matter: This means no more vanity metrics! **Vanity metrics** often lead to optimization of metrics that make sense for a certain department but, in the end, not for the customers.

If you've ever worked for an airline, you know there are many departments that often work in silos. This often results in many departments working on optimizing their own metrics; however, when you look at the overall results, they're not necessarily positive.

For example, your digital marketing departments might optimize ads and work on click-through rates (CTR), analyze cost-per-click (CPC) metrics, and measure acquisition costs (CPA). This often means promoting the lowest fares to achieve higher conversion and lower CPA. On the other hand, the revenue management department usually optimizes for the best possible price and highest yields per seat.

Now add on the ancillary revenue department, which wants to boost ancillary revenue and ancillary attachment rates, and you can see how some of the metrics could be contradicting each other.

Now, more than ever, you need metrics that really impact your business and your customer experience. **See the "Ask the Expert" section with Ronny Kohavi for more details.**

2. Measure it "right"; take more from existing analytics: A key part of digital analytics is identifying trends, anomalies and opportunities. This is why you should really drill into segments and stop looking at averages or aggregated values. In addition, you should measure each step of your booking funnel in detail to see where your users drop off (per different segments).

However, our research shows many airlines still don't have this tracking set up properly in their analytics. It's not an airline industry specific problem, either. Google Analytics expert **Brian Clifton did audits of 75 enterprise analytics** setups and found a similar trend:

73% of websites had the booking funnel setup wrong, and **85%** struggled with visitor segmentation.

Setting up your existing analytics properly doesn't require a major investment, but it can bring you huge benefits.

3. Go from reactive to proactive: Fewer resources means you'll need to automate repetitive tasks. As you saw in Section III, airlines can use customer insights tools to automate insight generation and for anomaly detection.

Another area of opportunity we see for airlines is to use **external data sources** (for example, flight demand data, metasearch flight data) and combine them with existing airline digital data (for example, web searches, conversion data, funnel drop-off data).

By deep-diving into external demand data, airlines will be able to **proactively identify markets and segments where demand will return and increase.** By comparing this data on a market / route / segment basis with their own website data, airlines can proactively take actions to increase conversion (e.g., adjust capacity, pricing, and demand generation campaigns).

See our "**Ask the Expert**" section with Boštjan Kožuh to learn more about that.

Overall results

Audit Scorecard Item	Percentage Correct	Percentage Amber	Percentage Wrong
Account Setup & Governance	24%	44%	32%
GATC Deployment	54%	32%	14%
AdWords	50%	25%	25%
Site Search Tracking	20%	30%	50%
File Download Tracking	34%	5%	61%
Outbound Link Tracking	19%	10%	71%
Form Completion Tracking	24%	16%	60%
Video Tracking	8%	23%	69%
Error Page Tracking	50%	3%	46%
Transaction Tracking	26%	19%	55%
Event Tracking	25%	36%	39%
Goal Setup	18%	39%	43%
Funnel Setup	8%	18%	73% ←
Visitor Segmentation	7%	8%	85% ←
CampaignTracking	18%	47%	35%

Source: Brain Clifton

HOW CAN YOU MEASURE AND OPTIMIZE WHAT REALLY MATTERS?

Ronny Kohavi
VP at Airbnb and co-author of the book Trustworthy Online Controlled Experiments: A Practical Guide to A/B Testing

I see a lot of digital optimization gone wrong because we measure and optimize the wrong metric. You talk about OEC (overall evaluation criteria); why is it so important?

"I think there's a few things to say about the overall evaluation criteria. One is, if the organization is able to map their strategy into a set of metrics that are measurable in the short term, then it has achieved a huge amount of progress.

When I start working with teams – and I had the fortune of working with multiple groups at Microsoft, many of them very, very big – usually the process that we go to in the early stages is talking, understanding the dynamics of the business, and mapping some of the strategy into metrics. It's a hard problem. These are brainstorming sessions. People come up with ideas. Sometimes they're very sure of something, but it turns out to be that it doesn't stand up to scrutiny and has to be evolved over time.

The trick that you have to think about is that you're measuring something in the short term, yet you want to be predictive of the long term. That is a hard thing to come up with when you think about the metrics that you should be optimizing."

In your book you have one very interesting example with Amazon and your experience with their email and personalization program. Can you share that?

"When I joined Amazon, we did run controlled experiments on email, and that was done even before my time, but they were generally positive. Anybody that came up with an idea of, 'Hey, let's email users who bought a book from a single author, let's mail them if that author comes up with a second book.' Seems reasonable. Started an email program, runs great. We make revenue, even relative to the control group.

Then you introduce another program and you say, 'Let's find similarities,' use an association algorithm or even just one-to-one recommendations, and then you start another email campaign."

"That's where you have to say there is a tradeoff here. Every user that unsubscribes from our emails, we lose the ability to market to them through this email channel. We lose the lifetime value of that channel, and that could be pretty important.

"So we said, what is the lifetime value of the email channel for a user that unsubscribes? Then for every campaign, we evaluated the percentage of people that unsubscribed multiplied by that lifetime value that we just lost and compared that to the lift from the emails. Shocking as it was to many, many people, most of our email campaigns were actually negative under that metric.

As you add more and more campaigns, they all seem like they're positives, but you start to hear from users that we're spamming them too much.

That's where you have to say there is a tradeoff here. Every user that unsubscribes from our emails, we lose the ability to market to them through this email channel. We lose the lifetime value of that channel, and that could be pretty important.

So we said, what is the lifetime value of the email channel for a user that unsubscribes?

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It was an amazing insight and a way to control, to find that countervailing metric that helps you understand that you can't just have a metric that's monotonically increasing with an action because you'll just do that more and more. There has to be some sort of a balancing metric that tells you that you're not doing as well.

It's also an example where once you realize that this lifetime value is a large number when people unsubscribe, you change the way people unsubscribe and tell them, 'Hey, we realize you didn't like this email. Let us unsubscribe you just from this email program or campaign that you didn't like, but let's keep the other email programs running for you.'

That lowers the loss of an unsubscribe from the ability to market them on all email campaigns to just that single campaign, so it reduces the countervailing metric.

We were able to get significantly better campaigns coming out, high quality campaigns, with a lower cost to unsubscribe."

The OEC must be measurable in the short term (the duration of an experiment) yet believed to causally drive long-term strategic objectives […] The hard part is finding metrics measurable in a short period, sensitive enough to show differences, and that are predictive of long-term goals. For example, 'Profit' is not a good OEC, as short-term theatrics (e.g., raising prices) can increase short-term profit, but may hurt it in the long run. Customer lifetime value is a strategically powerful OEC.

OEC definition; source: Trustworthy Online Controlled Experiments: A Practical Guide to A/B Testing

HOW TO GO FROM REACTIVE TO PROACTIVE

Boštjan Kožuh
Data expert and partner for digital analytics at Diggintravel.com

So, what does it mean to be proactive and not reactive?

"**Proactive** firstly means that we need to think and act on the basis that we do not know everything. This seems to be an obvious thing, but it is a point where many organizations are losing opportunities. We need to be curious and constantly try to find new ways to analyze data and test new ideas. Testing and prototyping will obviously not always lead to major breakthroughs as there is a certain level of serendipity involved in the process, so it is so important that we are doing a lot of exploration.

Next, proactive means breaking away from the reporting paradigm into **agile analytics**. Reports have their role as they standardize our views on the data and allow comparisons of key metrics through time; however, they embed knowledge that we already have – as such, they promote our standard behavior and actions based on prescribed KPIs. Simply stated, this **traditional business intelligence process prohibits ideation** – and this is a problem today when we are challenged with coming up with ideas no one else has, just to survive and compete.

The traditional approach simply does not meet the needs of the volatile business environment. Data-driven airlines have already recognized this and are therefore driving the s**hift to agile and self-service model**. In this sense, agile BI not only provides a nimble technical environment, but is also helping to change organizations' approach to data exploration."

Machine learning and other artificial intelligence approaches are on the rise today, and they can discern patterns and trends that we might not otherwise see. Is this the way to becoming proactive?

"Yes and no. I am a big fan of machine learning and advanced analytics and work with them a lot; however, this is not the right place to start. I see that for most companies we need to step back to (almost) the beginning – to how and which data is used to create insight into daily operations, customer behavior and KPI performance.

Business intelligence might sound like old news, but for the majority of companies, this is the area to revisit or re-develop first in order to progress to the next stages of data-driven decisions. I like to say that **to be good at advanced analytics, you first need to be excellent at more basic business intelligence.**

That said, machine learning could be a great source of new insights once you have explored and understand your data.

It can, for example, reveal which are the distinctive groups of our users – not the traditional ones like frequent or non-frequent travelers or business/leisure passengers, but groups that are similar in their purchasing behavior and needs. This insight allows us to address their needs more precisely.

The other case that we work on a lot is **forecasting** – not only does looking into the future give us feedback on whether our actions are producing the results we wanted, it also allows us to detect parts of our business that are not working as expected.

For example, if online sales for a certain device type and user country are low, that by itself is not

always cause for alarm, but if we compare the numbers to the forecasted ones, then we immediately get signals to act."

What kind of data do we need in order to do proactive analytics? Is this an area we need to revisit and start thinking about new ways to source data?

"For most companies in the travel industry, the first problem lies in bringing together all sorts of disparate silos of passenger information – booking information from transaction systems, web and mobile behavior (including searches, visits, and abandoned carts), email data, customer service info, etc. – to create a single, consolidated view of the customer.

Secondly, the problem is that there is so much internal and external data available and we are not using it.

The data that is left unanalyzed or not used effectively is called dark data, and this can be very costly. United Airlines reported that bad data is supposedly costing them 1 billion USD annually or approximately 3% of annual sales.

My advice to airlines is to start thinking outside of their data box. For example, in the COVID-19 situation, most airlines are seeing a huge drop in demand and even searches on their websites. But people are still searching, although more on aggregator sites than individual websites.
This suggests that **we need to include this data in our analyses to see if the demand for our products is in line with market demand, whether our product still matches what passengers are searching for or whether our offering is becoming more or less attractive.**

This is incredible insight for both marketing and revenue management departments."
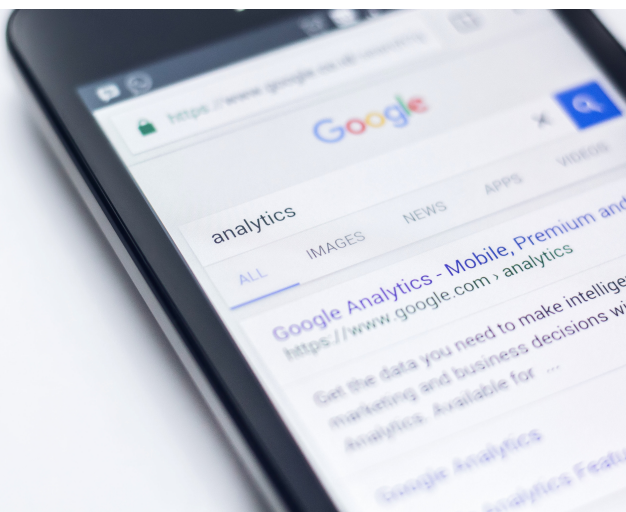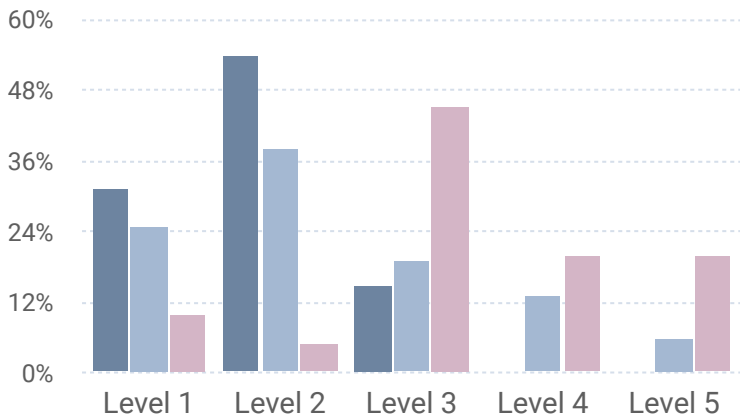
TEST QUANTITY

Q: HOW MANY TESTS AND EXPERIMENTS DO YOU DO?

- **Level 1:** None; 1-2 tests per quarter
- **Level 2:** Ad-hoc testing (projects); 1-2 tests per month
- **Level 3:** Regular and planned testing; 2-5 tests per month
- **Level 4:** Interactive testing; 5-10 tests per month
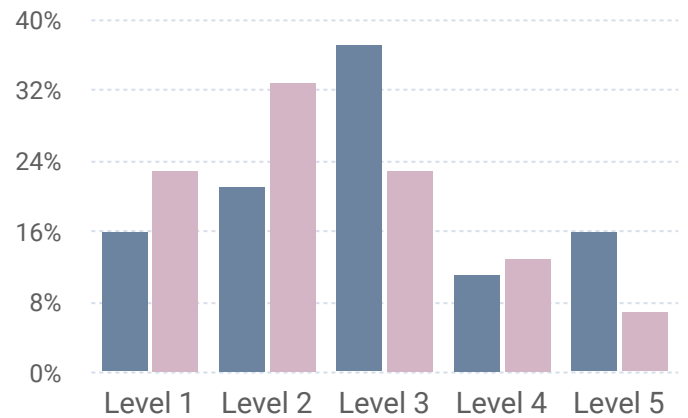- **Level 5:** Disciplined testing; 10+ tests per month
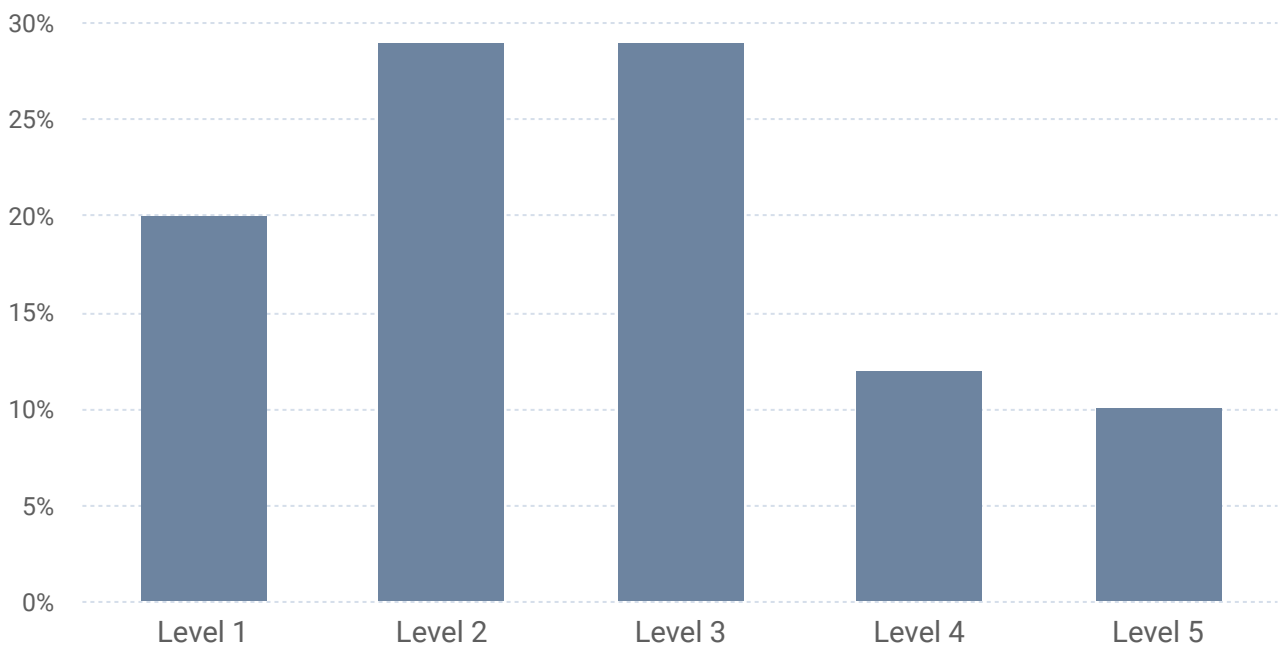
By Size

Small   Medium   Large

By Type

LCC   FSC

KEY STAT: HALF OF AIRLINES STILL DON'T TEST REGULARLY, ONLY 22% DO MORE THAN 5 TESTS PER MONTH

Unfortunately, this stat is the same as in last year's survey. **49%** of the airlines from our survey don't test (20% are at Level 1) or do so only on an ad-hoc basis (29% are at Level 2). Testing quantity is especially problematic for small airlines (85% don't test regularly) and FSC carriers, where the share of airlines that don't test regularly is 57%.

Testing quantity is really where digital optimization leaders distinguish themselves from the rest. All but one of our airline CRO Leaders run at least 5-10 tests per month. The best do even more, as 71% of the Leaders do more than 10 tests per month. On the other hand, of the rest of the pack (i.e., airlines not classified as Leaders), only 12% run more than 5 tests per month.

To be clear, A/B testing does not equal digital optimization, as some of the "growth hacking" experts would like to portray conversion optimization. Digital optimization and CRO are much more complex, with other key areas involved, as you can see in our framework.

However, testing and experimentation are extremely important for your optimization and growth. The more you test, the more you learn, and only systematic testing results in long-term conversion growth.

You can learn more about why you need to go beyond simple optimization (growth hacks) and how to mix explorational **experiments with optimization experiments in the "Ask the Expert" section.**
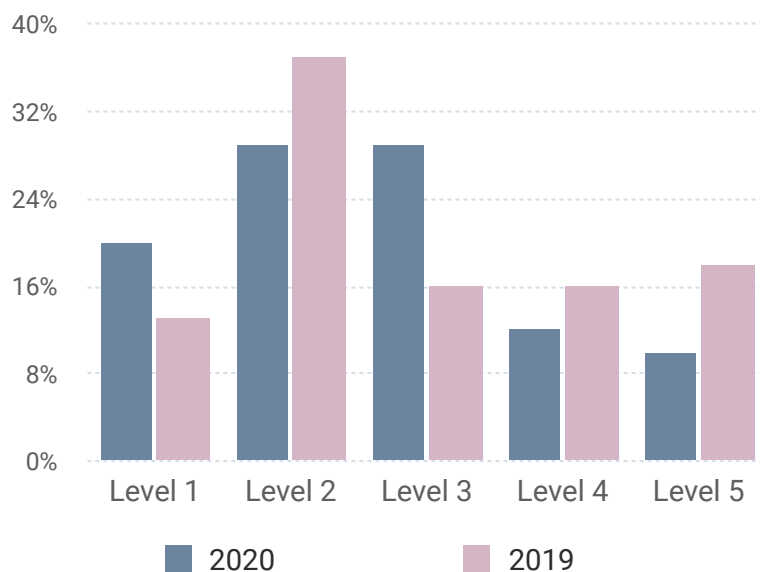
What prevents you from running more experiments?

WHAT'S NEW IN 2020 AND WHAT COVID-19 WILL CHANGE

2020 ■ **2019**
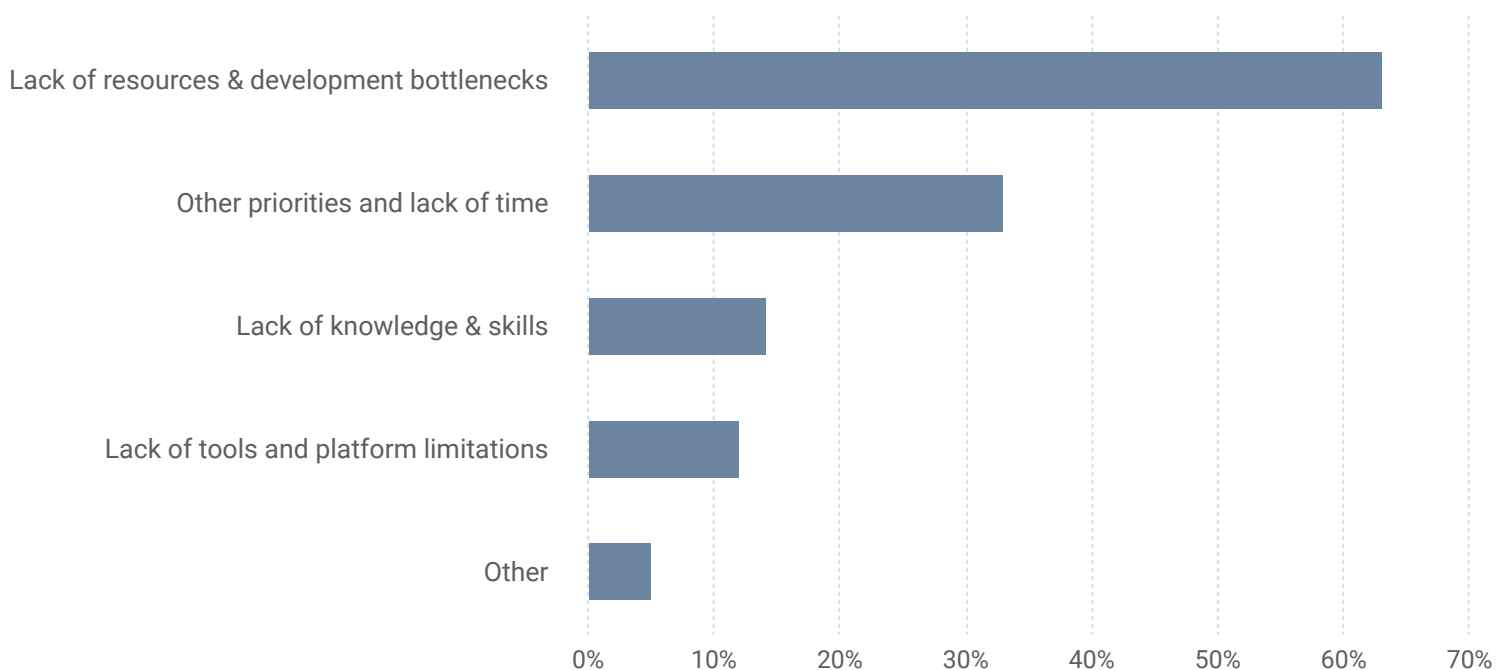
Testing quantity is an area in which we didn't see progress in 2020 compared to a year ago. Airlines still struggle to increase the number of tests and experiments on an ongoing basis.

As you can see, airline digital optimization experts have stated a lack of resources and dedicated developers as the key reason that prevents them from experimenting more. In the wake of COVID-19, airline development resources will be even scarcer.

So, should airlines experiment even less going forward?

Our advice is definitely not to decrease experimenting and testing, but to actually increase it.

We see the following three areas as opportunities for airlines to use experimentation to develop better digital products and increase conversion rates:

1. Test to de-risk ideas and new products: Smaller digital teams and fewer development resources shouldn't mean airlines have to test less. On the contrary, airlines will have smaller margin for mistakes/risk. One of the things you may be hearing is that some people think you need to make big and bold bets now, big and bold ideas, and that you don't need to test because we need to be fast. It's actually quite the contrary. Even though the timeframe is condensed, we still need to test and de-risk ideas.

The concept of de-risking ideas is very important, especially now when everybody is resource strapped and you cannot afford uncalculated risk. Bold ideas and testing do not exclude themselves.

The only thing that is really different now is speed. You cannot develop and test in 3, 6 or even 12 month cycles like most airlines might have done before. What we need to do is quick, agile user research and embed experiments into product development and optimization.

2. Define the right mix of experiments and dedicate resources for bold ideas: One of the questions most digital optimization experts ask is, do we test big or do we test a lot of small, incremental changes?

The current situation definitely requires innovation, so bigger and bolder ideas are needed. You need to have the option of exploring new models and new digital product solutions (for example, subscription products, new pricing and ancillary models, etc.). However, we don't believe this is an either/or question. The best approach is to mix both: bigger (explorational) experiments with smaller incremental ones (optimization).

See the "Ask the Expert" section with Ronny and Stefan to learn more about this.

3. Be more agile and prepare better in order to run experiments with higher success rates: How can airlines test more with fewer resources and less time?

A simple answer would be to run experiments with higher impact and success rates. Better success rates, higher conversion, and better profitability mean in the long run airlines can re-invest in more resources. Booking.com, for example, historically has had above-average conversion rates, which allows them to invest in digital optimization teams. But how can you run better tests with a higher "win" probability?

The answer is to prepare better by doing agile and systematic user research. In Section III: User and UX Research, you saw that airlines see A/B testing as one of the top activities that helps them understand users. It's great that digital optimization experts value A/B testing; **however, A/B testing is not user research**. You shouldn't use testing as the main or only user research activity. Testing is the last part, the validation. The more research you do beforehand, the better the win rate and, even more important, you'll test things that really matter for your users.

See the **Examples section f**or a great comparison correlation between A/B test preparation and quality.

In addition to that, you can also see advice from **Jakub Linowski, Chief Editor at GoodUI**, on how to run more tests by doing testing and development in parallel.

TESTING BIG VS SMALL?

Stefan Thomke
Author of the book Experimentation Works: The Surprising Power of Business Experiments and an authority on the management of innovation

Ronny Kohavi
VP at Airbnb and co-author of the book Trustworthy Online Controlled Experiments: A Practical Guide to A/B Testing

You both write in your books that in companies that do experimentation, you don't see these huge wins or huge results or huge uplifts, but it's more like it comes with quantity and a lot of small incremental wins. But on the other hand, I also see experimentation people that would say you need to test big. Big things, big changes will bring you big results. Especially in the current times. What is your view on this?

Stefan: "There are different kinds of experiments. That's why I'm always reluctant just to call them A/B tests or conversion optimization, because I think experimentation is much bigger.

Just roughly, you can think about experiments at two different levels. At one level you have the kinds of **optimization experiments** that you study yourself and that you see. The idea here is to do landing pages and things, to do that conversion optimization. Typically what we do there is very small experiments, and we make very small changes. We can do that because our sample sizes are very large. **And it allows us also to do cause and effect learning**. We change just one variable, we randomize, and we can, with laser precision, say which of the variable changes

causes what to happen. That's one class of experiments, and many experiments are like that.

But I also see other types of experiments, which I call **exploration or discovery type of experiments**. There, you may change many variables at the same time. The intent there isn't always to get precise cause and effect, because when you're changing many variables at the same time, you can't really pin it down on one variable.

The idea here is perhaps to maybe explore, to get some sense of directionality that allows you to say, okay, if we completely, for example, have our landing page and we make it all yellow or blue or whatever – something big – it gives us some sense of how customers are likely to respond to it. Then we can kick into **optimization experiments** again and then refine and fine-tune some of these things.

So I think we need to think more broadly about experimentation than just about fine-tuning and fine optimization. Having said that, though, even small experiments can have big changes in terms of revenue."

That's true, especially for the large airlines that have tens of millions of users on their website each month.

Stefan: "Absolutely. There's one example in my book. Microsoft Bing, an employee ran a simple test – only took a couple days to make the software change, and much to their surprise, it ended up lifting up revenue by more than $100 million a year. Just one small change. Again, because [there's] a lot of traffic. So the digital world, you can scale things instantly. You can expose these changes to a lot of people, and that

makes it very, very powerful. I call it high velocity incrementalism, because we want to make many small changes fast, and then the cumulative impact can be huge."

Ronny: "As far as the pipeline of ideas sometimes, if all you do is try to get a small number of wins, then you might go for very small incremental improvements that lead you to these minor differences, and probably some of them are wrong because you're running a large number of small ones that are close to zero, but by chance, some of them will be positive.

So, it is important to think about the fact that you don't want to go there with small incremental changes. **You want to have a portfolio of projects, some that are very bold, high risk, but also high reward**. And you should expect many of them to fail.

Then some of those that are more **incremental** – you look at some industry best practices, you learn from them, you try them out, you develop your own, and then you move incrementally."

But quantity still matters, right? Because over time, the more you experiment, the harder it usually is to get wins and high success rates?

Ronny: "One of the overall statistics that we found at Microsoft over a large number of experiments is that about one-third of them are actually successful, meaning they improve the OEC (overall evaluation criteria) in a statistically significant manner."

Only one-third?

Ronny: "Yeah, it's very interesting that it's only one-third that are positive. One-third tend to be neutral; you've done something, doesn't move the OEC enough. And then there's one-third, which I think is the most surprising part, one-third of the experiments actually hurt. Like, here it is, you've built this project that at least some people thought would be good for the customer or for the business, and it turns out that it was based on some anecdotes or there were bugs in it, and when it actually shipped, it was negative.

So this idea of approximately one-third, one-third, one-third was true for some of the products that we worked with. In areas that have been optimized for a while, like Bing, hundreds of experiments run concurrently all the time, this program has been running for several years, it's actually harder to find a successful example.

That one-third that I quoted in the beginning was actually decreasing over time, and we ended up with a success ratio much closer to about **10-20% of ideas that were actually beneficial,** meaning improving the metrics that we had set.

The beauty of controlled experiments is that you can detect very, very small changes relatively quickly, and then understand which ones you should determine as winners and ship them and which ones are losers that you have to basically reiterate. That's another problem. Do you iterate on an idea, or do you say, 'Let's fail fast. This area is not promising; let's try something new'?"

*This chart by **Mathieu Fauveaux, a conversion optimization consultant at FWO**, shows why spending time on user research allows you to understand user problems and define a better strategy. This results in a better win rate and improving your user digital experience (instead of improving small "vanity" metrics).*
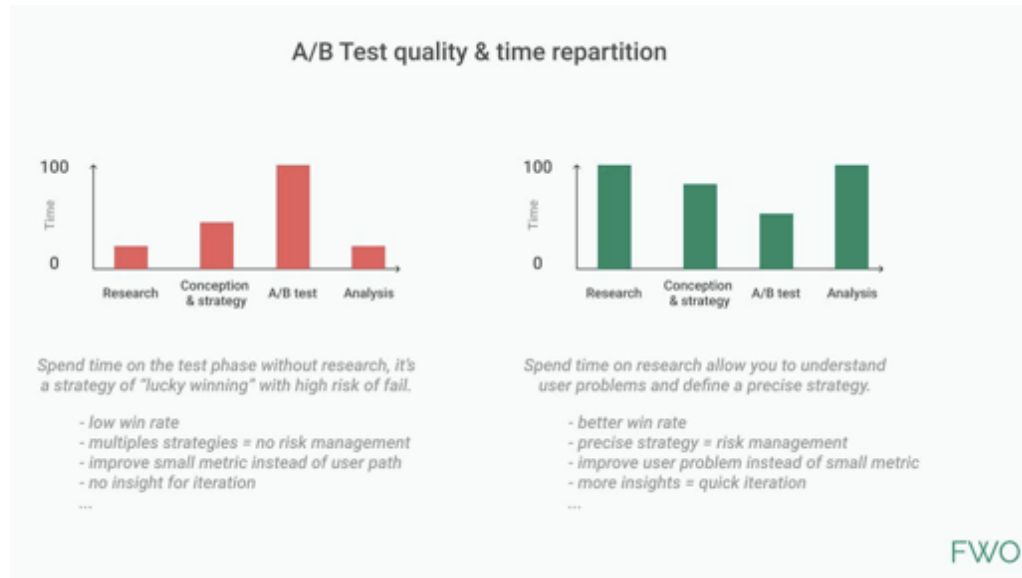
Jakub Linowski, a Chief Editor at GoodUI, is analyzing patterns and leaked experiments from companies such as Amazon, Netflix, Airbnb, Etsy, Google, and Booking.com with the goal of learning what works and what fails.

Here is his advice on how you can run more tests by doing testing and development activities in parallel:

TOOLS

Q: WHAT TOOLS DO YOU USE FOR YOUR CONVERSION OPTIMIZATION ACTIVITIES?

- **Level 1:** Basic web analytics platform, performance monitoring
- **Level 2:** Level 1 + advanced web analytics; simple A/B testing tools (client-side); simple user research tools
- **Level 3:** Level 2 + advanced customer research tools; customer experience analytics tools; simple personalization tooling
- **Level 4:** Level 3 + advanced A/B testing tools (server-side) or own testing platform; project management tool for optimization
- **Level 5:** Level 4 + own testing platform embedded in the core digital platform; advanced personalization tools; predictive analytics & optimization tools
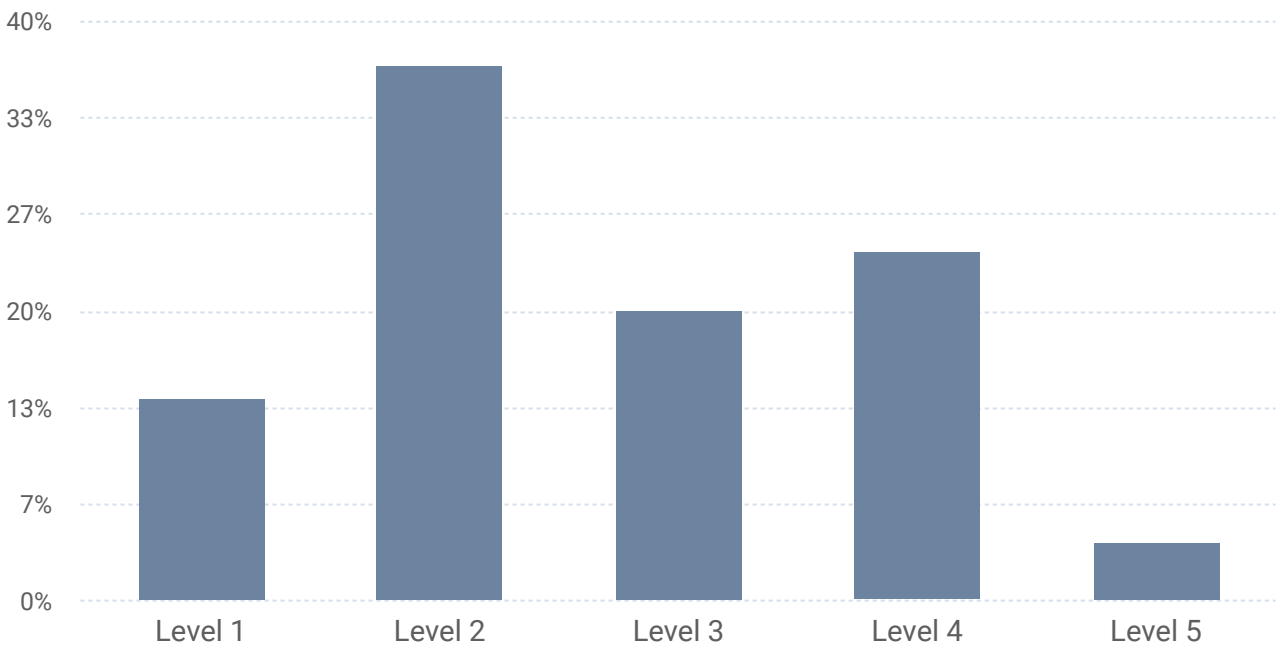
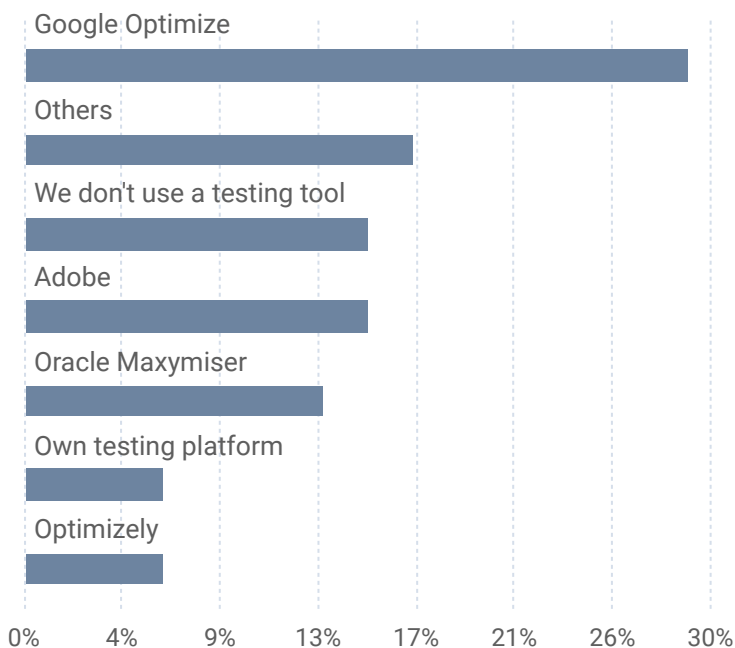## By Size
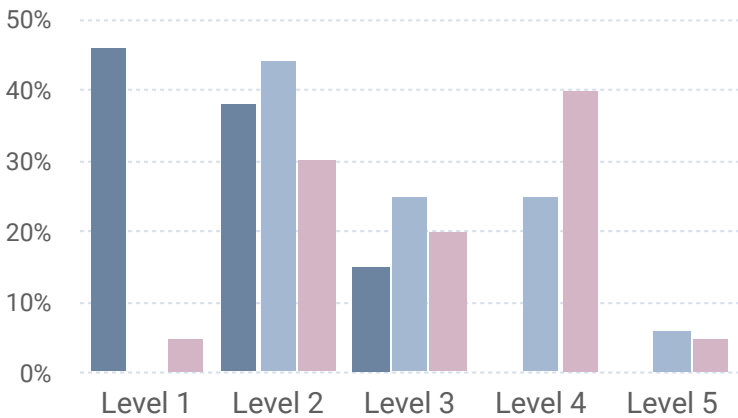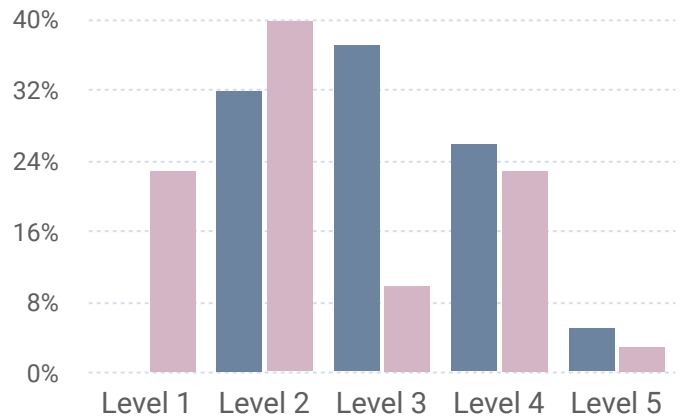
Small   Medium   Large

By Type

LCC   FSC

51% of the surveyed airlines claimed they either don't use any tool for testing (Level 1) or they use simple A/B testing and user research tools (Level 2). On the other hand, 28% of airlines use more complex server-side A/B testing tools or have even built their own testing platforms (Level 4 or 5).

Similar to other areas, there is a big difference between low-cost and traditional, full-scheduled carriers. Only 32% of LCCs use simple tools (Level 1 or Level 2), while 63% of FSC airlines do. There is also a big gap between small and large airlines when it comes to digital optimization tools. 85% of small airlines use only basic digital optimization tools, and no small airline is above Level 3. On the other hand, 45% of large airlines use advanced tools (Level 4 or 5).

The following chart presents which options airlines chose when it comes to testing platforms.

Do you use A/B testing tools (Google Optimize, Adobe Tests, Optimizely, Oracle Maxymiser, VWO ...) or you have your own testing platform?

Google Optimize

Others

We don't use a testing tool

Adobe

Oracle Maxymiser

Own testing platform

Optimizely

0%   4%   9%   13%   17%   21%   26%   30%

Only a few large LCCs are really integrating the testing platforms tightly into their digital ecosystem (only 6% said they have their own testing platform).

Currently, the vast majority of airlines are using third party vendors to run tests and experiments. **Google Optimize** is the most popular testing tool among airlines, followed by Adobe. Oracle testing tools, which were behind Optimizely in last year's research, are now the third most popular among airlines.

When planning on building a digital optimization and experimentation program, a testing platform is one of the key elements you need to consider.

Do you use a vendor (third party), or do you build your own testing platform?

How will testing and the testing platform be integrated into your digital product development process?

Large organizations like Microsoft and Amazon and travel digital giants like Airbnb, Uber and Booking.com have all built their own testing platforms. Testing capabilities are at the core of their digital platforms and product development, and they run thousands of tests. However, these are digital companies that have only digital products and as such are not the right comparison for most airlines (especially small and medium sized ones).

You can find advice about using a third party versus building your own tools in the **"Ask the Expert" section** and an example of an airline that built their own testing program in the **Examples section.**

WHAT'S NEW IN 2020 AND WHAT COVID-19 WILL CHANGE

We changed the question and answer structure for our survey question about tools this year, so we will not provide a comparison to the prior year for this area. Instead, we'll focus on an area we highlight in various parts of this yearbook – **personalization**.

Throughout this yearbook, we've emphasized why airlines should not use a "one-size-fits-all" approach anymore. Airlines will need to address different users' fears (and motivations) and address them differently per user type, behavior and other relevant data.

51% of airlines said they don't use personalization engines. However, 76% claim to combine digital optimization (CRO) and personalization activities within the same team.

Personalization, personalization tools and machine learning algorithms are often portrayed as the silver bullet solution that will automatically solve all problems. In our opinion, this is not the case; instead, airlines need to go step-by-step: **analyze data, find segments and patterns,**

understand users, adjust messaging and user experience and test to validate. **Personalization, digital optimization and experimentation should work hand−in-hand.**

Especially now that we'll need to do more with less, airlines cannot afford huge personalization initiatives for which they cannot prove positive ROI.

To do so (to take full advantage of personalization and maximize ROI) we advise airlines to:

1. Combine personalization and experimentation initiatives.

2. Start with simple rule-based personalization. You can start by identifying the first few segments in your data and then A/B test different messages.

3. Use experimentation to learn how personalization works and which types work best. Use experiments to understand the impact and calculate the ROI of personalization initiatives.

Check out the **"Ask the Expert" section** to learn more about why and **how you should combine personalization and experimentation initiatives**.

Do you combine conversion optimization and personalization activities (within the same team)?

No

Yes

| 0% | 11% | 23% | 34% | 46% | 57% | 69% | 80% |
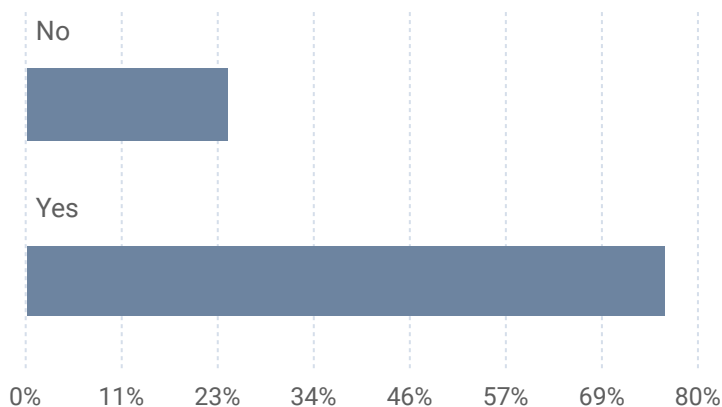
Do you use a personalization engine?

No

Yes

| 0% | 7% | 15% | 22% | 29% | 36% | 44% | 51% |
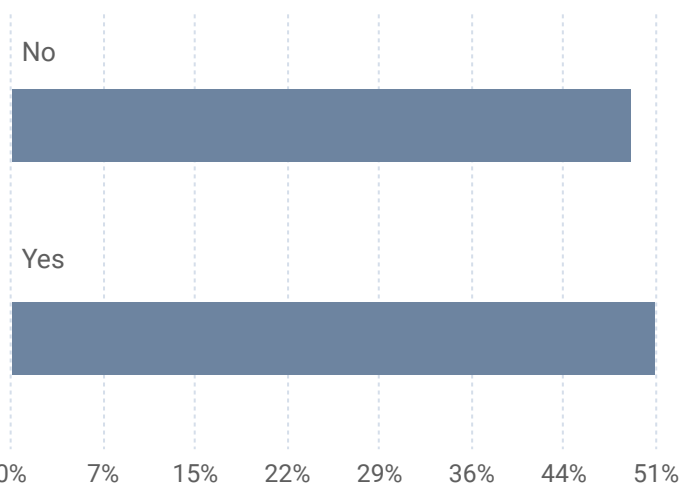
BUILD OR BUY? USE A THIRD PARTY TESTING TOOL OR BUILD YOUR OWN PLATFORM?

Stefan Thomke
Author of the book Experimentation Works: The Surprising Power of Business Experiments and an authority on the management of innovation

Ronny Kohavi
VP at Airbnb and co-author of the book Trustworthy Online Controlled Experiments: A Practical Guide to A/B Testing

How can airlines start with experimentation? Do they build their own or use a third party tool?

Stefan: "You have to look at this historically. A lot of the big players that do this at scale, like Amazon and Microsoft and Booking and even Netflix and Google and all these companies that do this at large scale, when they started out, there were really no reasonable third party solutions available, so they had no choice but to build their own platforms.

Some companies have invested an amazing amount of resources in it. If you just look at Microsoft, they have a team there of I think now 90+ people, and all they do is maintain infrastructure. A lot of companies cannot afford to have such large efforts just to build infrastructure, run infrastructure, and all that.

The good news is there are now an increasing number of third party platforms available that include some of these elements that some of these large companies have, Optimizely being one of them. That's encouraging. That means if you

want to get started – and that scares the hell out of people. They're saying, 'Oh my God, we have to now put a 50- or 20-person tech team on this.' You can just invest in a third party solution.

It is kind of interesting, because I saw the same evolution in the engineering world something like 15-20 years ago. Initially, when all these tools took off, companies built their own, but then after some time they realized that just maintaining these tools and improving them would be way too much effort, because these companies were not IT companies. They eventually moved over to third party solutions.

I think that's going to happen in this space at some point as well. As the third party solutions are getting better and better, companies will choose that path."

It seems that for those who want to get started, that's a no-brainer. Select a third party tool and start running and grow with the tool as you grow with the processes, knowledge, and scale. However, for the bigger ones that want to scale, currently it's a bit of a challenge because if you want to do more complex experiments, third party tools limit you, right?

Stefan: "They do limit you, for sure. But keep in mind, usually what I find is the real limit, the real brake is not the tool."

*Here are two quotes by **Ronny Kohavi** from his book, Trustworthy Online Controlled Experiments, about the challenge of build vs. buy. We recommend reading the book for more detail on what to consider when making the decision of build vs. buy.*

"Scientifically testing nearly every proposed idea requires an infrastructure: instrumentation (to record such things as clicks, mouse hovers, and event times), data pipelines, and data scientists. Several third-party tools and services make it easy to try experiments, but if you want to scale things up, you must tightly integrate the capability into your processes. That will drive down the cost of each experiment and increase its reliability. On the other hand, a lack of infrastructure will keep the marginal costs of testing high and could make senior managers reluctant to call for more experimentation."

And:

"Growth slows when the organization reaches a culture of 'test everything' and the limiting factor becomes its ability to convert ideas into code that can be deployed in controlled experiments.

"While we all have been heavily involved in building in-house experimentation platforms at our respective companies, we are not necessarily recommending that every company should build their own. Especially in the Walk [early] phase, building or buying is an ROI decision."

HOW DO EXPERIMENTATION AND PERSONALIZATION WORK TOGETHER?

Shiva Manjunath
Conversion Rate Optimization Manager at Gartner

Ronny Kohavi
VP at Airbnb and co-author of the book Trustworthy Online Controlled Experiments: A Practical Guide to A/B Testing

Chad Sanderson
expert on the subject of digital experimentation and analysis at scale

In the airline industry, there is a lot of talk about personalization and machine learning, but a lot less about experimentation. How do experimentation and personalization work together?

Ronny: "The beauty of these two domains and why I'm attracted to both is that personalization or any predictive model that you have to try to help users – whether it's personalized to the user or whether it's contextualized to the population – you've got to use controlled experiments because they're the best scientific method that we know today to evaluate whether what you're building is useful. These two go hand-in-hand. I'll say even broader, it's not just personalization; it's any machine learning algorithm that you've built to do something. The best way to evaluate iterations of the model is through controlled experiments. We see that today. As machine learning and AI are being used more and more in the industry,

obviously people are starting to use controlled experiments more heavily to evaluate those models and to be able to launch the challenger to the current champion."

Shiva: "One of the things that's commonly overlooked, too – my personal opinion on this is that a lot of people just assume that personalization, or at least their execution of the personalization, is the right thing to do, and they just roll it out. But I have a very strong belief that you shouldn't just personalize for the sake of personalizing. One, you won't be able to calculate the ROI. Experimentation is super helpful in not only getting you wins, but calculating what that lift is and how much revenue your program is actually driving. It's very unique in that there's certain programs that it's difficult to attribute revenue specifically to branding campaigns and stuff like that. Sometimes it can be a little bit muddy. But within an A/B test, you literally know 'this experiment that we ran gave us X amount of dollars in revenue as a lift.'"

Chad: "I think people should start with rule-based personalization, which is really just A/B testing on specific segments. I don't think this is really necessary from a process perspective, but it is really necessary from a company culture perspective. People need to learn that personalization doesn't work because you just come up with some idea or throw some content at the wall and let the machine do it for you. You need to understand exactly how these audiences differ. Then, once you really have the data in a good place, once your experimentation program is in a good place, once you have the ability to measure the personalization, then you can start working algorithmically."

Only three airlines in our survey claimed to use their own experimentation platform. Here you can see an example of the "Product Owner – Experimentation Platform" role at AirAsia.

To scale up their testing programs, airlines need to embed testing into their core booking platforms and digital product development.

Experience

AirAsia
3 yrs 1 mo

Product Owner-Experimentation Platform
Jan 2020 – Present · 2 mos

Conversion Manager - Group (E-commerce)
Full-time
Feb 2017 – Jan 2020 · 3 yrs
RedQ, KLIA2

-Built and enhanced in-house experimentation platform that could be used to split traffics, run multiple A/B tests and pushing real time user data for analysis to Google Analytics and Big Query.
-Increase website conversion through personalization and improving website performance via A/B or multivariate tests
-Work on A/B test prioritization model with impact scoring system to assist product managers to prioritize test and implement test road map.
-Conduct pre and post feature deployment analysis to suggest further page optimization.
-Coordinated with product managers to plan and execute the tests.
-Coordinated with data scientist to build automated test performance dashboard for faster analysis and better decision making across multiple stake holders.
-Coordinated with developers to build the A/B test and conduct testing before deploying the test.
-Conduct on-page revenue impact analysis to identify features with highest potential revenue growth for Product Managers to prioritize new feature developments
-Conduct monthly funnel conversion analysis and primary metrics performance to ensure improved conversion rate across the website.
-Constantly monitor and enhance the accuracy of the test results by optimizing the test and analytics methods.
-Coordinated with software developers to create custom features and trackers to achieve stake holders and partners goals.
- Experienced with experimentation tools like Optimizely and Google Optimize

see less
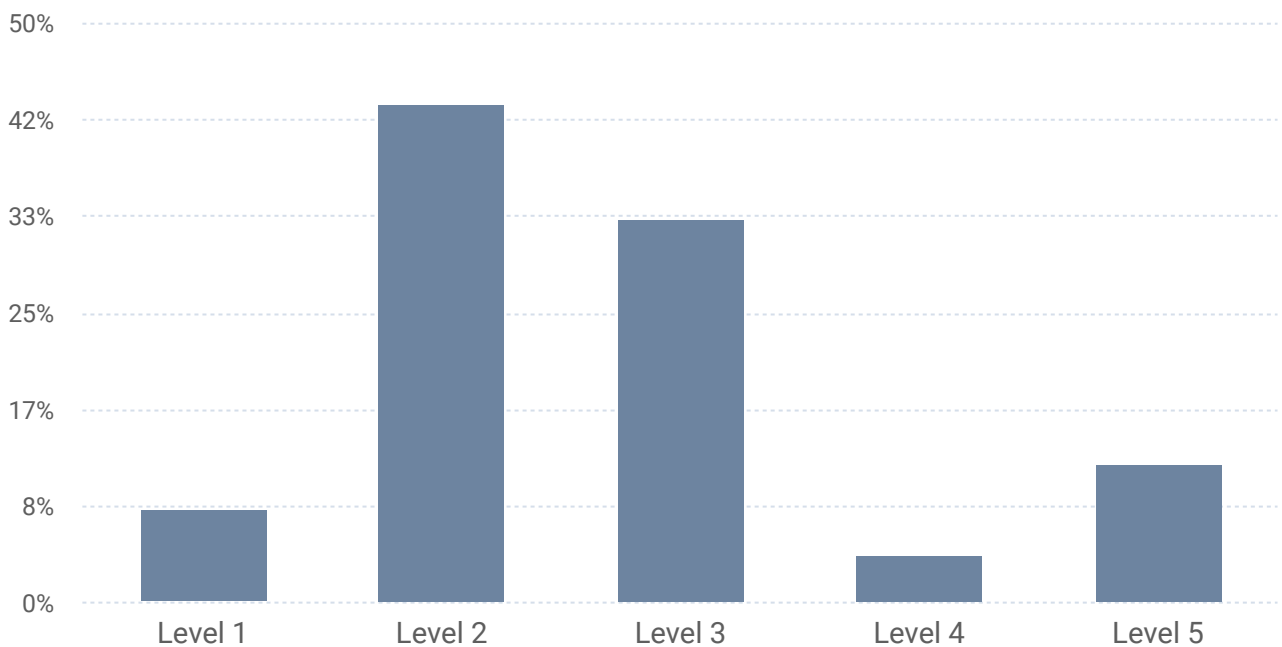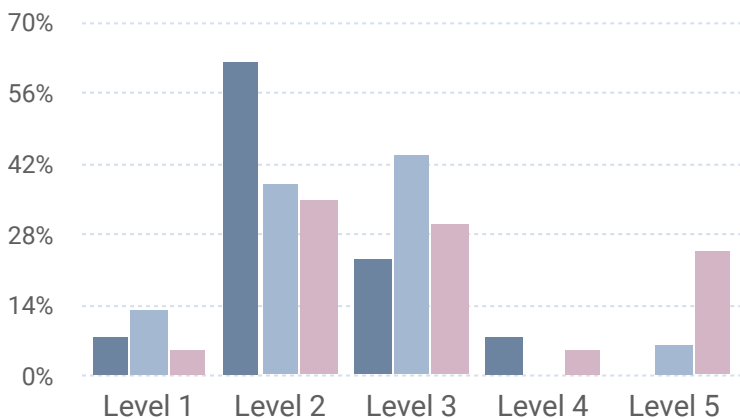
INTERNET BOOKING ENGINE (IBE)

Q: HOW FLEXIBLE IS YOUR INTERNET BOOKING ENGINE (IBE) FOR A/B TESTING AND OTHER EXPERIMENTS?

- **Level 1:** Our IBE doesn't support A/B testing and experiments
- **Level 2:** Simple A/B testing and experiments are possible but with workarounds and take a long time & effort to implement
- **Level 3:** We can do basic and semi-complex experiments and A/B tests on an ongoing basis
- **Level 4:** We can do split-path A/B testing, have & test several versions of booking flow at the same time
- **Level 5:** We completely own and manage booking flow and have no limitations with A/B testing and experiments

By Size

Legend: Small, Medium, Large

By Type
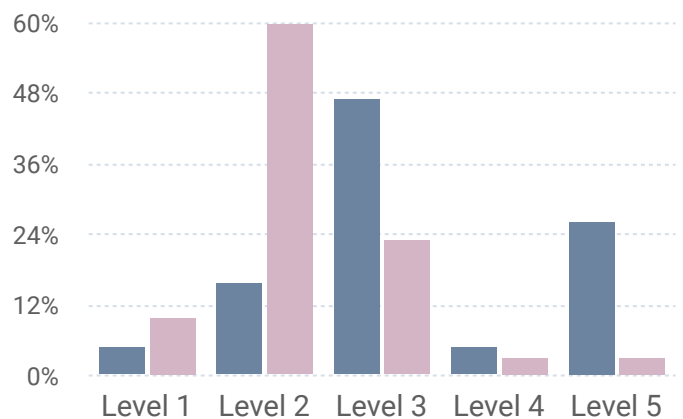
Legend: LCC, FSC

KEY STAT: LOW-COST AIRLINES ARE WAY AHEAD WHEN IT COMES TO BOOKING ENGINE FLEXIBILITY FOR EXPERIMENTATION

51% of airlines claimed they have internet booking engine (IBE) solutions that are not flexible for A/B testing (Level 1 or Level 2). 43% from this group said their IBE solutions allow them to run A/B tests, but it takes a lot of time and effort to do it (Level 2), and 8% said their IBE solution doesn't support A/B testing at all (Level 1).

On the other hand, only 16% of airline optimization professionals are satisfied with the testing capabilities of their IBE platforms (Level 4 or Level 5). Because of limited resources, small airlines mostly use pre-built IBE solutions from major industry vendors. 70% of small airlines said their IBE solutions are not flexible when it comes to testing. Large airlines mostly build their own booking solutions based on APIs, so they have much more flexibility with customization and running tests. Consequently, 60% of them said their IBE supports their A/B testing and experimentation initiatives (Level 3, 4 or 5).

However, the most glaring difference is when we compare low-cost airlines and traditional, full-scheduled carriers. Only **21%** of LCCs claim to have an inflexible booking engine setup (Level 1 or 2), while this share is **70%** for FSCs. 26% of LCCs say they have complete control of their booking engine for running experiments and tests (Level 5), compared to only 3% of FSC airlines. Because
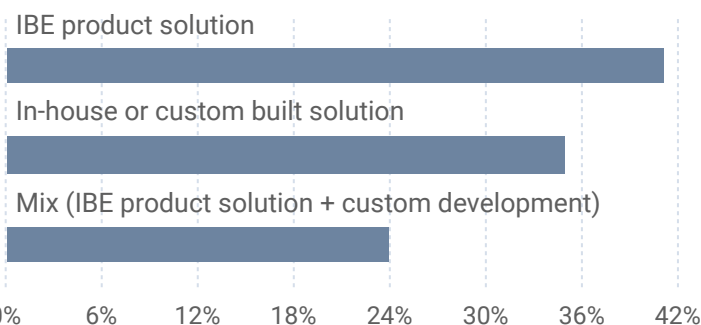
of a more complex distribution and IT landscape (and legacy solutions), FSC airlines' IBE solutions are much less flexible that the ones LCC airlines are using. More than half (53%) of FSCs use IBE product solutions from big vendors like Amadeus and Sabre. These product solutions are often built as an extension of the legacy PSS platforms and as such are not the best fit for modern digital optimization. By contrast, the share of LCC airlines that use IBE product solutions is much lower (37%). Navitaire is by far the most popular IBE platform among LCC airlines; however, most low-cost carriers use it only as a base and have custom development on top.

In the prior section (Section 6 – Tools), you saw why selecting the right testing tools is really crucial for your digital optimization program. To take your digital optimization and experimenting to a higher level, you need the capability to run more tests and more complex optimization scenarios. To do that, testing needs to be embedded into your core booking platform (IBE). If you can't run split-path tests and different versions of booking flows, you're basically just optimizing pages within the same booking funnel. This is still better than running no tests at all, but your optimization and results will be really limited.
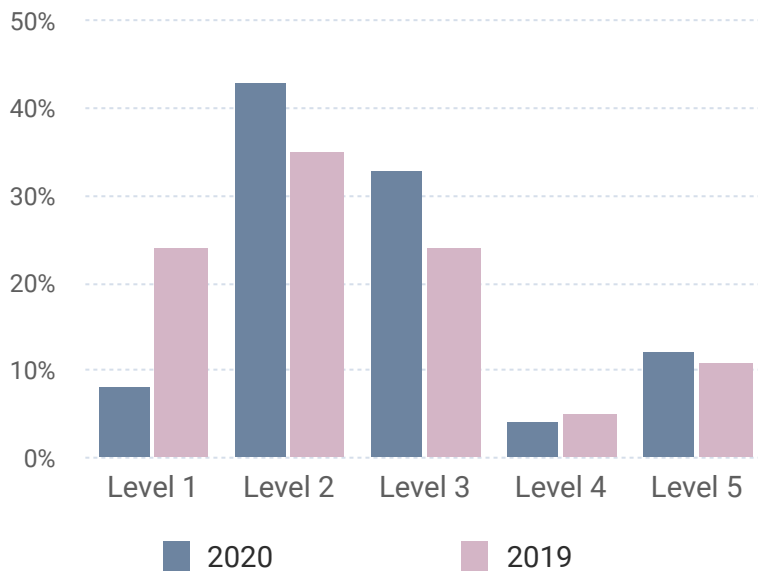
Most popular IBE product solutions

Amadeus

Navitaire

Sabre

Others or not specified

0%   6%   11%   17%   23%   29%   34%   40%
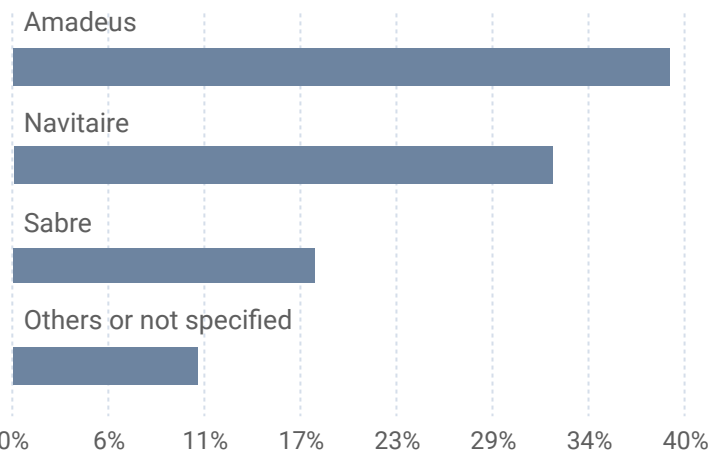
Do you have a custom built IBE or do you use an IBE product-solution?

IBE product solution

In-house or custom built solution

Mix (IBE product solution + custom development)

0%   6%   12%   18%   24%   30%   36%   42%

WHAT'S NEW IN 2020 AND WHAT COVID-19 WILL CHANGE

A bar chart showing percentage distributions across Level 1 through Level 5, comparing 2020 and 2019.

	Level 1	Level 2	Level 3	Level 4	Level 5
2020	8%	43%	33%	4%	12%
2019	24%	35%	24%	5%	11%

2020 / 2019

If you compare the 2020 results to those of our previous survey, you can see that the big picture results didn't change much. The share of airlines that claim they have inflexible IBEs (Level 1 or 2) is still above 50% (51% this year compared to 59% the year before). The only big change is from Level 1 to Level 2; only 8% of airlines claimed their IBE doesn't support A/B testing and experiments, compared to 24% the year before.

While for most other areas the results were significantly better than in the prior survey, airlines seem to be stuck in the IBE area. There is some logic behind this trend, as changing the booking platform is not a simple project and it usually takes airlines a lot of time to migrate to a new solution.

However, it seems that A/B testing capabilities are now at least considered when airlines plan their new IBE setup. A few airlines in our survey said they are in the process of migrating from an IBE product solution to a custom-built solution based on API, which will enable them to be more flexible when it comes to testing and experimentation.

As you saw in our "Key COVID-19 Trends" chapter in the first part of this yearbook, there will be opportunities for airlines to expedite some of the things they've struggled with.

The first opportunity is that there will be a lot of first-time digital buyers used to traditional channels like travel agencies, so FSCs can use this to increase direct booking channel shares. To make the most of this opportunity, you'll need to do take control of your "storefront," i.e., your website front-end and booking flow pages. You should "own" your platform if you really want to take your digital optimization and experimentation to the next level.

Digital optimization is all about constant optimization, experimenting and making fast iterative changes. If you have a solution with long product development cycles and one-size-fits-all releases, then your digital optimization will be really limited. For bigger airlines, "owning" in most cases actually means having internal development and UX teams and an in-house platform they fully control. For others (especially smaller airlines), "owning your platform" probably has a different meaning. It means working on a setup (a combination of a flexible IBE product solution, specialized digital provider, etc.) that allows you to be agile and flexible.

More than that, to get away from the "one-size-fits-all" user experience in the booking process, you need to have an IBE that allows you to customize (and test) messaging and UX based on data and user behavior.

Ideally, you should be able to create custom booking flows and ultimately develop new digital products (for example, a subscription product).

See how **Kayak developed an innovative features in their search results display** to address new user behavior and concerns in the **Examples** section.

The second opportunity is that more people will want to go "contactless and touchless." For airlines, this means you can expedite the automation of some existing processes (web check-in, baggage drop, bring your own device in-flight entertainment, on-board touchless payment) and develop new ones (home/hotel baggage pickup, food, drinks and retail pre-ordering, airport pickup, etc.).

However, new digital touchpoints are both an opportunity and a big challenge for digital optimization. Our research shows that we as an industry have hardly figured out how to do digital optimization for desktop websites. Just moving from desktop to mobile is a transition that most airlines still struggle with.

Our survey shows that more than half of airlines (51%) don't do digital optimization and experimentation on mobile apps.
Mobile UX and mobile apps require different analytics and a different experimentation skillset.

If airlines want to make the most of the "new" self-service, touchless mindset of users, doing digital optimization on mobile apps and other new touchpoints will be crucial.

You can read more about the difference between digital optimization and CRO on mobile vs desktop in the **"Ask the Expert" section.**
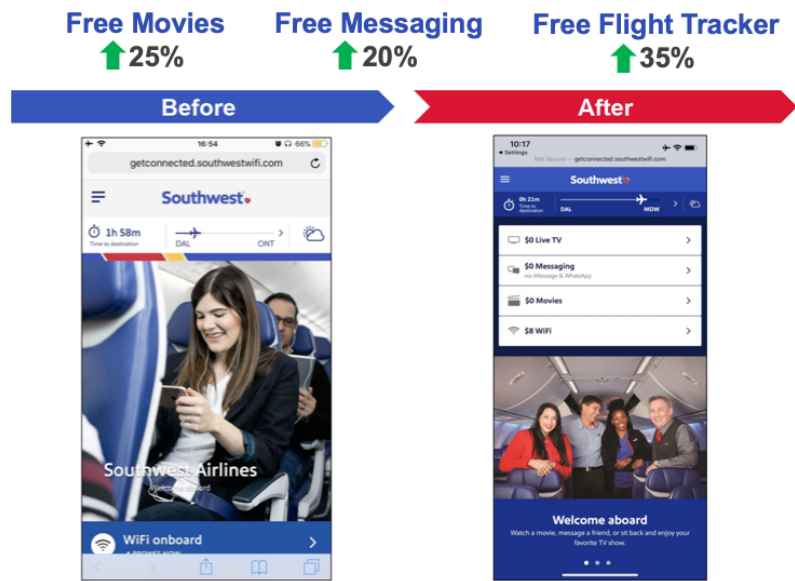
You can see an example of an airline (Southwest Airlines) doing digital optimization on an in-flight entertainment digital touchpoint

Which of the following platforms do you optimize (do user research, optimization, A/B tests)?
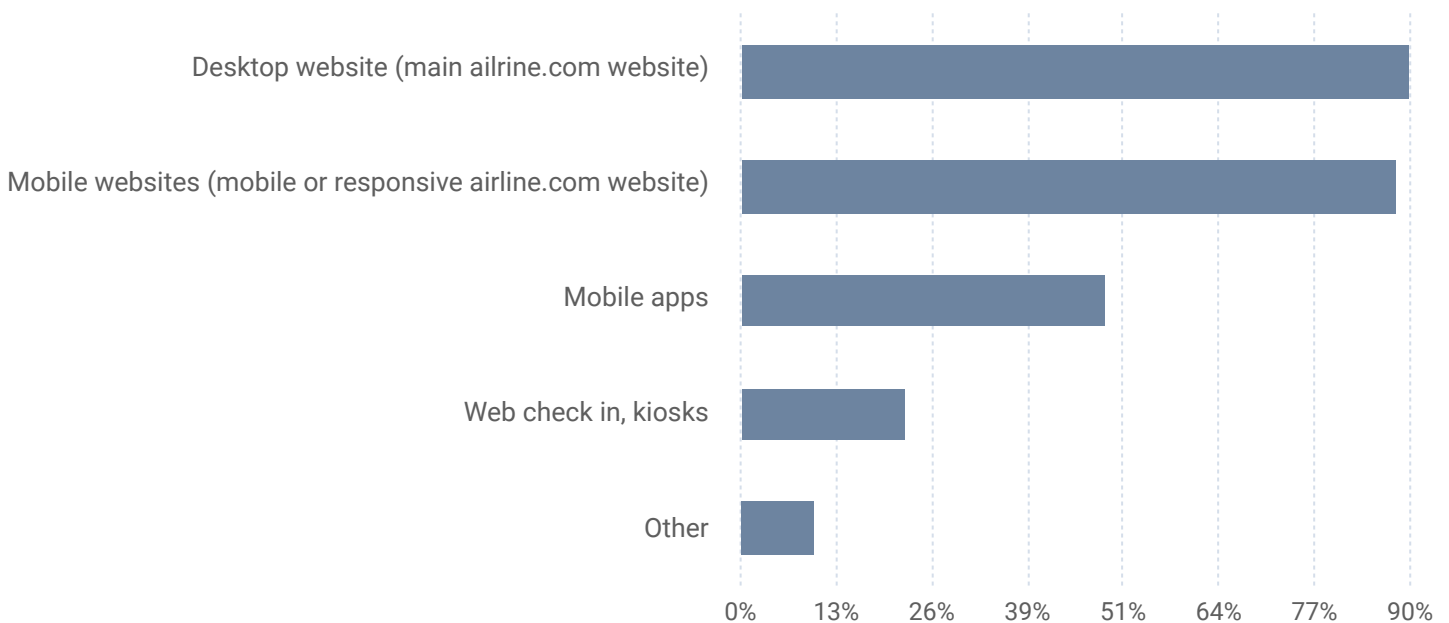
DIGITAL OPTIMIZATION AND CRO FOR MOBILE

Anna Potanina
*Mobile User Experience and
Conversion Specialist at Google*

It seems that we as an industry have hardly figured out how to do CRO and digital optimization for desktop websites. What do you think about how to start on mobile with CRO?

"Let me break it down into just mobile, starting at mobile, what kind of things you can consider there, and then how to start with CRO if they're not there yet.

Changing up the mobile CRO, I would say it should be the same approach as you have on desktop; it's just that again, **it's the same voice on all your dashboards, all your projects, in every single A/B test.** You should also be running experimentation for just mobile users, separate. Not every single test is designed for all platforms. Sometimes some tests just have to be designed for mobile only.

It definitely should become a priority, and this is where the speed, so the performance side of things, and the UX and design side of things have to work all together. We even have this concept that Google is talking about called **performance budget**. That is something that you can decide as a team for your mobile strategy – for example, let's agree that our page has to load in 3 seconds, no more. That is our limitation. What do we want to spend this 3 seconds on? Is that a script, is that heavy images? Every single change that any department is doing, any landing pages that marketing is launching, they have to coordinate with this OKR. This is really a great example of cross-functional work towards a shared goal, towards excellent mobile performance."

That's a good tip, to have a budget in seconds, not in value, in euros or in dollars.

"Yes, because at the end of the day, performance is the money.

I would say also there's this idea of apps and web. They're part of the same mobile coin. It's quite interesting now to watch the industry and where we're moving, because originally there was this understanding that it's really different types of audience, it's different company goals that you're trying to achieve with app or web. But at the moment, the line is really blurring, and this is a trend that you will see all over industries, especially with technologies like progressive web apps that allow you to achieve the app-like experience on the web. For example, you can introduce offline functionality. I think there's a great example of Air France, that when you are offline, and then if you have checked in and you have a flight soon, they would be caching the page with your boarding pass. They use their offline state as an advantage and they say, 'Hey, you are flying, but we saved the most crucial information for you.' I think this is a great example of great customer experience and brand trust. We are asking people to leverage the offline state, to leverage the capabilities of the modern web. You can achieve a lot on the web that was not possible before, but now you can do it in apps and on the web as well."

If I go back to CRO and on mobile - what differences do you see when you do mobile optimization projects?

"I would say some of the best practices are relevant only to mobile design. But that's more the subject. It's not the process. The process should be the same. Maybe some design guidelines would be slightly different on mobile devices because we're using them differently, we're holding them with our hands, so we're tapping instead of [clicking]."

Do you have an example of such a design guideline that is different – for travel or in general – for mobile?

"If you take the navigation bar, the desktop has been designed and originally they have this website layout where you have the navigation bar at the top. In mobile, actually the bottom of the screen is considered a more ergonomic location, because if you're holding the phone with just one hand, you don't need to change the way you're holding it. You don't need to use the second hand in order to tap. You can just tap it with your thumb. This is what we see a lot on mobile websites. Specifically, a website would get this legacy design from desktop, so they would have this legacy top navigation bar on the top of the page. We're asking them to challenge this and try the bottom one, because this is how the app would be designed, so why don't you do the same bottom navigation bar, which is more ergonomic than mobile, on your website as well?
These kinds of things – the ergonomics, the size of the buttons, the contrast – for apps, it's things like the on-boarding experience. Quite often when you're installing the app, what kind of experience you want to show so that you don't annoy people too much, but then you still add value and explain what the service is about. All of those things that are relevant to the way people interact with mobile devices."

The navigation bar is a great example because, a lot of times people try to do a responsive mobile site and these things just get replicated from desktop to mobile. This is probably one of the things that you would see on the first user test where people will have their device in their hand?

"Yeah, but it's still not that easy. It's not as straightforward. If it was so obvious then everybody would have done it already. There is this user habit as well, because a lot of people are used to the top navigation bar, especially on the web. To some extent, people are used to the hamburger button."

The "Don't Make Me Think" principle. They don't want it in a different location.

"Exactly. But eventually, from the apps world and from a lot of mobile usability research, we know that the bottom of the screen is a much more accessible location. If you expose your top level categories, the icons, in the bottom navigation bar instead of hiding them behind the hamburger button, that's a much better user experience because people are instantly aware of the different things they can do in the app and on the website. So why don't you do this on the website? It's tricky. There are some user trends too – not user trends, more like habits. The hamburger button has been around for a while. But you need to challenge this constantly. Again, with Progressive Web Apps, when we can really take inspiration from the native apps and scale this to the web platform, I think that is a really good time to start asking yourself these questions."

*As airlines and hotels update their policies to accommodate travelers, Kayak added a **Flexible Option** filter on site that will break down search results into two categories: travel partners offering free cancellations (in the form of travel credits) and those waiving their change or cancellation fees.*

With travel details differing between providers, we wanted to clearly display the policies of each partner so travelers have all the information they need to make smart decisions about current and/or upcoming travel plans in one place.

Source: https://medium.com/kayak-tech/q-a-with-kayaks-product-management-team-lead-on-developing-covid-19-flexible-filter-4b988728a821

ORGANIZATIONAL SUPPORT

Q: WHO IS A CONVERSION OPTIMIZATION SPONSOR IN YOUR ORGANIZATION?

- **Level 1:** None - conversion optimization is recognized on an individual level
- **Level 2:** Head of Ecommerce - conversion optimization is recognized on a departmental level
- **Level 3:** Director level - conversion optimization is recognized by director or higher management
- **Level 4:** VP level - conversion optimization is recognized and supported by VP level executive (top management support)
- **Level 5:** Entire organization - conversion optimization is recognized as a crucial activity and has company-wide (C-level) support
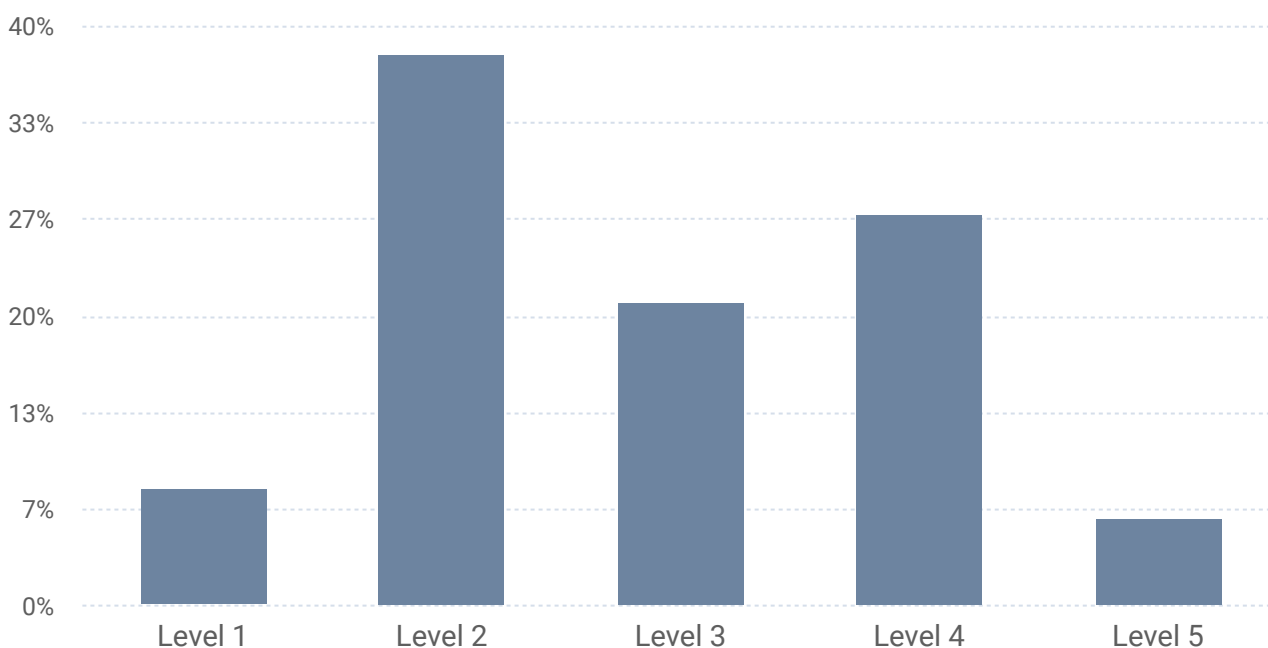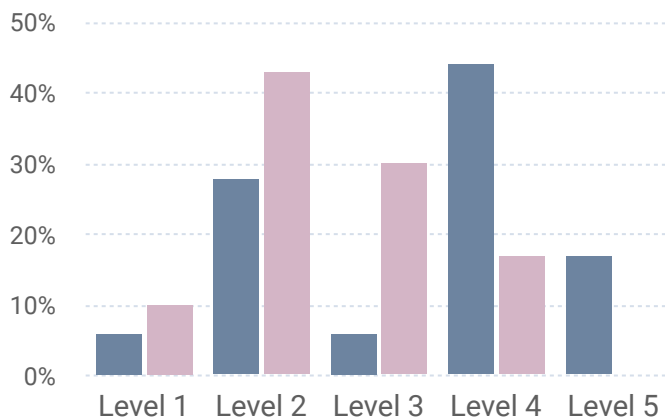

By Size
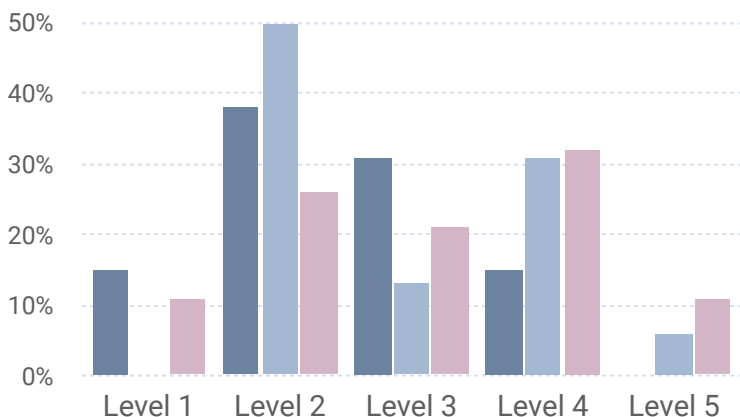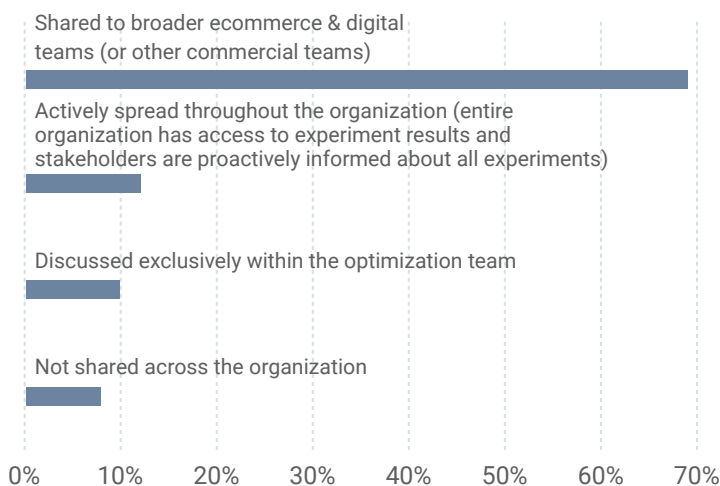

Small   Medium   Large

By Type

LCC   FSC

KEY STAT: LCC AIRLINES UNDERSTAND THE IMPORTANCE OF EXPERIMENTATION; NOW IT'S UP TO THE REST TO CATCH UP

For 33% of the surveyed airlines, digital optimization and experimentation have company-wide exposure and top management support (Level 4 or Level 5). This share is much higher (**61%**) for LCC airlines compared to FSCs, where the share is only **17%**. Low-cost airlines are in a better position because they are younger companies, built with digital DNA.

However, even for LCCs and airline digital optimization leaders, there is a next step to take. As you can see from our survey, only 14% of airlines claimed to have dedicated CRO and experimentation budgets. Even more, 45% of airlines don't have any budget for CRO and experimentation. The majority of surveyed airlines (69%) share experiment results and learnings within ecommerce and digital teams, and only 12% said they share results across the whole organization.

Experimentation should not be part of digital optimization only. It shouldn't be seen as an ecommerce process only, or even just a marketing tactic (a.k.a. a growth hack). A data-driven, scientific approach should be adopted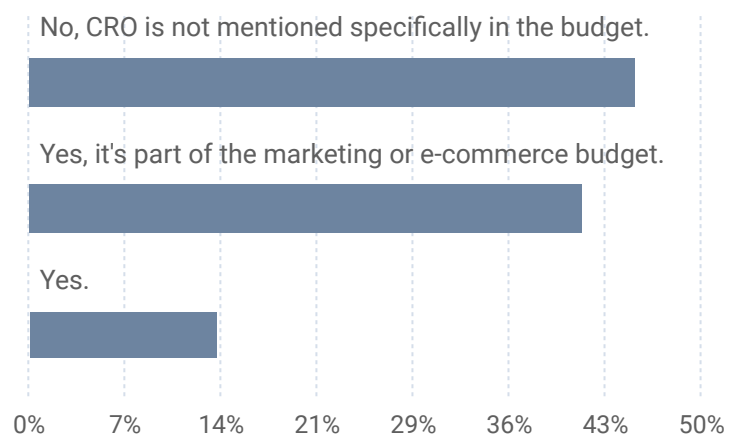 company-wide. To achieve long-term growth, airlines need to embrace optimization and experimentation as a strategic initiative.

This is why, for the third year in a row, we're sharing this quote from **Bart Schutz**, an optimization expert, as it really emphasizes the importance of company-wide recognition:

"Embracing optimization caused hockey stick growth among lots of digitally mature companies. Yet lots of other companies still struggle to follow their growth paths. A major cause is the embedding of 'optimization' in an online marketing team, instead of embedding it as a 'company-wide, data-driven & evidence everything' culture. Exponential growth through optimization is not about an online marketing instrument, it's about DNA. Top down; embracing optimization should be a board level decision. Optimization is often a way more effective business strategy than innovation. Bottom up; the marketing and ecommerce teams that are currently 'just optimizing web & app pages' should start focusing on growing their business as a whole. Start applying optimization omni-channel and across all customer journeys and touchpoints."

This topic is so important, we **dedicated and changed the whole next "What will COVID-19 change" section to final Executive Summary with key takeaways!**

How are experiment results and learnings implemented and shared across the organization?

Shared to broader ecommerce & digital teams (or other commercial teams)

Actively spread throughout the organization (entire organization has access to experiment results and stakeholders are proactively informed about all experiments)

Discussed exclusively within the optimization team

Not shared across the organization

Does CRO have its own budget?

No, CRO is not mentioned specifically in the budget.

Yes, it's part of the marketing or e-commerce budget.

Yes.

DIGITAL TRANSFORMATION BY EXPERIMENTATION AND FAST FEEDBACK LOOPS

Joel Goldberg
Chief Digital Officer (CDO) at Wizz Air

How can we leverage technology and experimentation at a large scale?

"What works at even 20 million passengers doesn't necessarily work at 40 million. This is indeed bringing a new set of challenges, and absolutely digital, technology, AI, machine learning – just having a strong digital foundation in terms of the right data platforms and the right engineering practices in place is really, really important.

But I would mention one other thing which is maybe more related to people. We talk a lot about technology, but I think **at the heart of every digital transformation is actually people and our teams, not just in digital, but across the airline.**

One of the things we're working on is ways of working that allow us **to experiment and work in much smaller batch sizes or chunks of work and experiment in a way to really determine, where is the impact?** What does have impact? What will have impact on the bottom line in the near term?

So it's not just about technology; it's also about changing the way that we work, changing the way that we think, trying to take smaller bets, **trying to create faster feedback loops** so that we can actually be more cost-effective in figuring out where we invest and where we don't."

I've worked in the past with your digital team and the ecommerce team. I think the easiest way is to start with experimentation, like planning A/B testing on ecommerce, on your webpages, testing different variations, and then seeing in your digital analytics how that works. But what you're working on is also how to implement this same experimentation mindset in other parts of the business. This is very interesting because when you move conversion optimization and testing and experimentation from the web to other parts of the organization, it becomes like business optimization and experimentation. Is this what you're talking about?

"Absolutely. You said it better than I can. This is exactly where we're trying to go because we believe, whether it's an external customer or internal customer, customer-facing process driving revenue or internal process driving efficiency, it's all in service to the customer. **We can apply the same exact principles.**

It's sometimes a bit harder, especially when you're dealing with larger programs or off-the-shelf software, to think in smaller chunks, to think in smaller bets.

But this practice and mindset is really key for us, and it really fits our ULCC principles because it really means **not just fail fast, but fail small. Fail small, fail along the way to success**.

Taking those small steps allows us to really try to understand how we can further optimize our business, which drives cost efficiencies."

Even though this survey question was the same as in the prior year, we'll skip the year-on-year comparison chart for this section. We also won't provide you with COVID-19 takeaways for this section.

Why?

The first reason is because we didn't see any significant improvements in recognition of digital optimization and experimentation. Secondly, we strongly believe airlines will finally need to change and adapt a scientific, data-driven approach, not only for ecommerce and marketing but for the overall business.

The bad news is that the pressure airlines are facing is unprecedented. The road and return to profitability will be extremely hard, and airlines will need to optimize to succeed.

We've used the mantra of **"doing more with less"** throughout this yearbook. The good news is that a data-driven approach works and increases your chances of success significantly.

According to Forbes, "companies who adopt data-driven marketing are 6x more likely to be profitable year-over-year."

Culture (and organizational support) is where all areas come together. **This is why we're highlighting key changes airlines will need to make to adopt a data-driven, scientific culture here, in the form of an Executive Summary.**

1. From ecommerce departments to the whole company: Data-driven experimentation needs to get out of digital departments. It needs to be unleashed and adopted company-wide. Like Stefan Thomke says:

"What this is really about is bringing the scientific method to management decision-making. As you know, the scientific method is all about hypotheses. It's about experiments and so on and having that kind of mentality or that mindset in everything that a company does, all the way from the top down to the mid-level to the bottom of an organization."

2. From silo vanity metrics to measuring the right metrics (OEC): We need joined metrics that have an end-to-end effect on profitability and customer experience. So, no more marketing optimizing clicks, CTRs and conversions and revenue management optimizing load factors and revenue per seat. As you saw in Section IV, we need to define the right OEC.

3. From channel to product: Conversion optimization, when only done in the digital department, is usually focused on optimizing low-hanging fruit (UX errors, simple optimizations). However, the more broadly we look and the more user research we do, the closer we get to real problems. To solve these real problems, optimization and experimentation should be focused on products, not channel. This is where the real value is found and where real change will happen.

4. From "efficiency" to "effects": Ton Wesseling, experimentation expert, talks about the move from efficiency to effects. In past years, airlines have adopted concepts like Scrum and agile to be more efficient. This is great because you get things done faster. The problem is we're still getting the same things done. To take the next step, we need to combine efficiency and effect – to get the right things done.

NOTE: You can find a link to Ton Wesseling's keynote talk in the references.
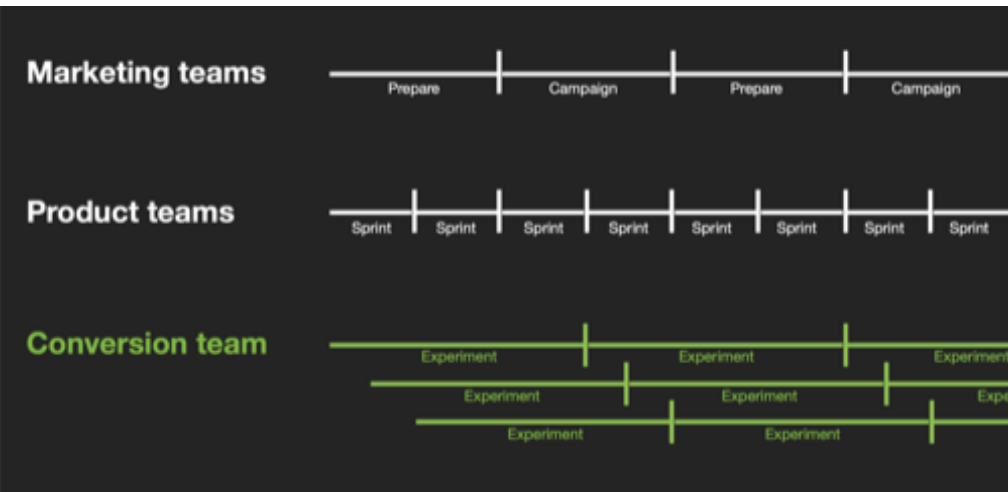
Source: Ton Weaseling - Conversion team as a separate team
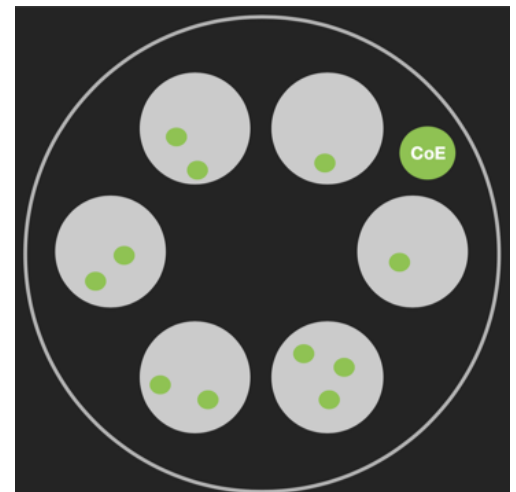
Source: Ton Weaseling - Centre of Excellence enabling marketing and product teams

5. From CRO and digital optimization to enabling product and marketing: To get those right things, we need a scientific approach to growth. This is why Ton talks about moving beyond CRO, beyond a digital optimization team that optimizes UX and UX fails.

He talks about a **Validation Centre of Excellence model**, which is very similar to what Stefan talked about in Section I. Instead of having a conversion team that works in a silo, you embed experimentation and data-driven practices throughout the organization. Instead of correcting marketing and product mistakes (e.g., finding UX fails), you actually enable product and marketing to get the right things done.

6. From HiPPO culture to democratizing and decentralizing experimentation and empowering innovation: To enable this transition, the culture and mindset at the top must change. Many airlines still have a hierarchical HiPPO (Highest Paid Person's Opinion) culture when it comes to decision making. To democratize experimentation and decentralize experimentation, a different setup and culture are needed. Airline CEOs need to understand how a data-driven, scientific approach based on experimentation works. They need to embrace and support it. **Brian Poe** (experimentation expert from CXL Agency) has

talked about the challenge of a decentralized program:

"In general, the democratization of experimentation is a good thing. Of course there should be guardrails in place, but in a decentralized program there's accountability from CEO all the way down to product owners. Compared to a centralized, many more employees are incentivized to learn what's ethical to test and what's best for the customer."

If airlines want to come out of this crisis – but beyond that, if they want to come out of it stronger – **they will need to fundamentally change how they work.**

Here at Diggintravel, we strongly believe that adopting a data-driven approach based on experimentation will enable airlines to work smarter and innovate faster.

Change is never easy, and this transformation will certainly require a lot of people and a lot of departments to work differently. To support you on this journey, Diggintravel will stay committed to providing you with the best possible insights and advice from the world's greatest experts.

We can do this together!

REFERENCES & SOURCES

REFERENCED DIGGINTRAVEL RESEARCH AND ARTICLES:

Diggintravel 2019 Airline Conversion Optimization survey
https://www.diggintravel.com/airline-ecommerce-cro-2019/
Tips For Your Airline Personalization and Experimentation Program
https://www.diggintravel.com/airline-personalization-and-experimentation-program/
Airline Innovation 101: Unleash the Power of Business Experimentation
https://www.diggintravel.com/airline-innovation-business-experimentation/
Tips for Your Conversion Optimization Process
https://www.diggintravel.com/conversion-optimization-process/
Google Expert's Tips for Airline Mobile UX Design and Conversion Optimization
https://www.diggintravel.com/airline-mobile-ux-design/

REFERENCED BOOKS, DOCUMENTS AND RESOURCES

Experimentation Works: The Surprising Power of Business Experiments; book by Stefan Thomke
Trustworthy Online Controlled Experiments: A Practical Guide to A/B Testing ; book by Ronny Kohavi, Diane Tang, Ya Xu (https://experimentguide.com)
The State of Digital Experience and Conversion in 2020 ; report by Consultancy
From 1 CRO team to the whole company embracing CRO ; presentation by Ton Weaseling
IATA Passenger insights in the times of a pandemic; report by IATA
The Real Cost of Poor Website Quality, report by BCG

REFERENCED ONLINE RESOURCES

https://medium.com/growth-tribe/how-do-you-stay-in-the-top-1-of-t-shaped-marketers-2018-version-c3dbfa120434
https://foundr.com/experimentation-culture-dan-siroker-optimizely
https://medium.com/@jchyip/why-t-shaped-people-e8706198e437
https://www.youtube.com/watch?v=BQ2_BwqcFsc
https://brianclifton.com/blog/2018/08/10/auditing-google-analytics-an-enterprise-study/
https://paxex.aero/2020/05/united-airlines-touchless-kiosk/
https://medium.com/kayak-tech/q-a-with-kayaks-product-management-team-lead-on-developing-covid-19-flexible-filter-4b988728a821

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