

ISSUE 2 / 20

FUTURE

PERSPECTIVE

BEST TIPS & TRENDS

HOW-TO'S AND USE CASES



FUEL MANAGEMENT + DIGITAL FUELING PROCESSES

TECHNOLOGY & INNOVATION

EVERYTHING YOU HAVE TO KNOW

FUEL MANAGEMENT + DIGITAL FUELING PROCESSES

BILL GATES, NOSTRADAMUS AND ELECTRONIC FUELING

Welcome To The Future Perspective

Bill Gates once said that digitizing an efficient process magnifies the efficiency – whereas digitizing an inefficient process magnifies the inefficiency.

When I started to analyze fueling processes, I observed a highly optimized and efficient process. But I also see a process that relies on tools and technology of the last century (and earlier). Therefore, we truly believe that it is time to elevate airlines' fueling process into the 21st century – and prove that Bill is right.

Moreover, and without being Nostradamus, I can promise you that only airlines that play the digital game have a chance to survive in the post-Corona shark tank.

So, let's get ready! With this Future Perspective issue we compiled our entire knowledge about the topic of electronic fueling. We do hope that it provides value to you. And more importantly, it motivates to explore this amazing world!

Enjoy reading!

Benjamin



ABOUT THE AUTHORS

Benjamin is an information-enthusiast, a content-maniac, and CEO of Information Design (in this order).

In his 20's he co-founded aviationexperts, a company focused on delivering first-class consulting services to the aviation industry. Initially started with two employees, the company had grown within 4 years to become +20 employees, generating a 7-digit turnover and serving renowned airlines such as Lufthansa, Emirates, S7, or Saudi Arabian Airlines.

In 2017 he joined Information Design as CEO with the vision of developing cutting-edge information products that help companies to create awareness, drive insights and ultimately boost their corporate performance!

He's a fan of social media and genuinely believe that creating and the free distribution of content is essential. That's why he's pot-committed to writing blog posts, hosting podcasts, and creating videos and other media.

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ABOUT THE AUTHORS

Robin is the young gun at Information Design already leaving his mark on aviation industry.

“Better start early” was probably the mantra Robin embraced when he started working in the aviation industry in 2016. As a project member at aviationexperts he earned his first stripes while working on extensive consulting projects for Emirates and Lufthansa.

After joining Information Design in 2017 together with Benjamin, he was able to flourish in the field of business intelligence and quickly took over control of several crucial projects and products for worldwide airline clients.

After taking an educational hiatus to complete his master’s degree, Robin has rejoined Information Design and is ready to help your airline to capitalize on the advantages of eFueling. If we can trust his word, this guide is just the beginning of that. He has some more aces ideas up his sleeve.

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INFORMATION DESIGN

about us

We believe that information is the single most important asset to drive a company's success.

Information Design was founded in 1996 with the clear vision to turn data into valuable and insightful information. Dedicated to this idea, Information Design grew steadily to more than 60 employees at its headquarters in Frankfurt and attracted internationally renowned airlines.

At Information Design we provide solutions to help businesses gain control of their performance – always led by the superior goal of designing solutions, specifically for the way people work today and building a foundation for insights, awareness, and solid business decisions.

Find out more on our website
www.id1.de



INFORMATION DESIGN

our aviation clients

We are proud and humbled to work with some of the most renowned airlines in the entire universe.

Here are some of our favourite clients.



Austrian 

ICELANDAIR 

 Lufthansa

 CATHAY PACIFIC

 Condor

 SWISS

VOLOTEA 

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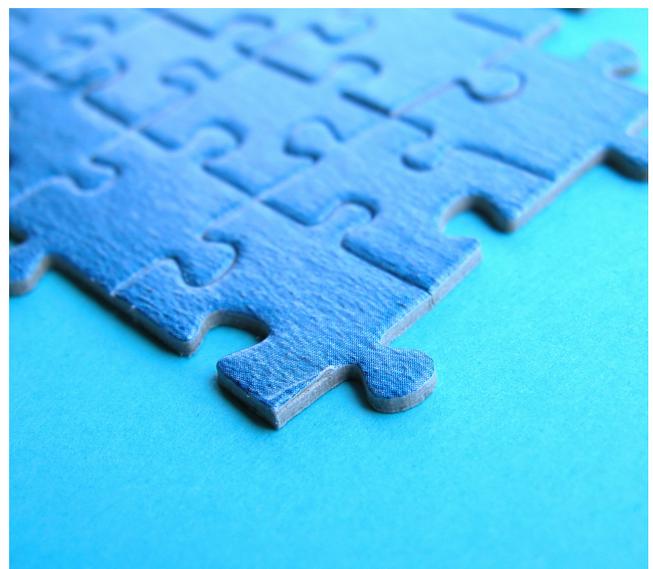
A comprehensive and detailed list of tangible benefits you can achieve with a digital fueling approach. A must-read!



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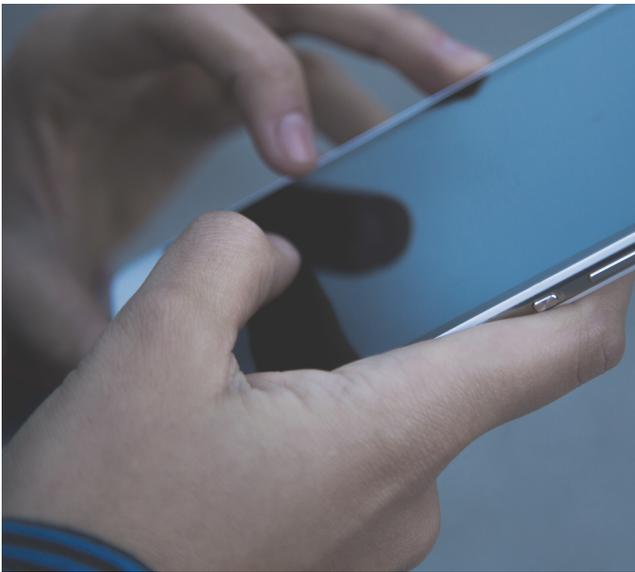
THE COMPLETE ELECTRONIC FUELING IMPLEMENTATION GUIDE

What's the road to implementing electronic fueling like? What's needed and how long does it take? Here are the answer you've been looking for!



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WHAT THE HELL IS EFUELING? A QUICK INTRODUCTION

Robin Weissgerber

Great! You made it past the first pages, but now you want to know what on earth is so special about eFueling that we wrote such an extensive guide about it.

Digitalizing the aircraft fueling process might be something you are working on for the last twenty years to save costs and improve your performance. So why am I talking about it in 2020? Why do I believe that it is time to rethink electronic fueling once more? Because we missed out on something, guys!

You've missed out something important!

Over the last decades, enormous sums have been invested into the digitalization of the aircraft fueling process with the age-old goal of saving fuel and therefore save cash.

Tremendous improvements have been made over the years, but airlines still face one major problem. They have to coordinate and communicate with a wide variety of fueling contractors across their network, many of them relying on different IT systems and procedural guidelines. This makes streamlining processes immensely challenging. As a result, it becomes difficult to achieve the cost-savings and improved process efficiency such a network-wide process offers.

Some Call It Revolutionary — We Prefer To Call It A State-Of-The-Art Fueling Process

With the technical opportunities the year 2020 offers, I believe that this last barrier can finally be overcome and help airlines worldwide simplify their network processes. The idea behind it is pretty simple, but it is bold. A digital communication hub that acts as an intermediary between airlines and fueling companies at every single airport around the globe. This way, airlines and fuel provider would only need to connect to one system enabling them to align all their fuel-related communication processes to that one system.

A Central Data Platform Connecting All Stakeholders

Such a digital communication hub finally offers the opportunity to route all your communication with the fueling companies across one central system. No need to start yet another implementation projects to connect the newest IT system of your fuel provider at one of your destinations. Simply connect your IT environment to the hub, and everything is taken care of – from the fuel order up to

WHAT THE HELL IS EFUELING? A QUICK INTRODUCTION

the receipt, every interaction will be digital and centralized. As soon as such a hub is implemented at one airport, every airline and fuel provider can use it, creating a network effect that will help to establish the standard by making the implementation more attractive to airlines and fueling companies.

Utilizing IATA Standards

To make the hub's implementation and the expansion of its network as swift and easy as possible, it should rely on

It's Not About Re-Inventing But Re-Thinking How It Works Today!

As I said initially, we don't need to reinvent digital aircraft fueling we need to rethink it. Nowadays, platforms make our life so much more comfortable in many different ways. Think about Uber and how it changed the way individual transport works. This was achieved by bridging the gap between two parties and making their interaction more convenient. A digital eFueling hub would do precisely the same. It is the last puzzle piece needed to



standardized communication protocols used within the aviation industry. The widely known IATA AIDX standard supports the full range of fuel-related messages exchanged by airlines and fueling companies. As the adoption rate of this standard is already very high across the industry, expanding its usage to the field of aircraft fueling should not pose a problem for either side. Using this standard will definitely help to accelerate its adoption and the expansion of the worldwide user network.

complete the digitalization of the aircraft fueling process. Having only one platform to use to connect to your fuel providers across your network will enable an entirely new level of streamlined processes around aircraft fueling and save fuel costs directly as well as in other closely connected areas. Together with its swift implementation enabled by the fact that it is based on established aviation standards make it highly attractive to airlines and fueling companies alike. Closing the addressed gap within the digital fueling process has

WHAT THE HELL IS EFUELING? A QUICK INTRODUCTION

therefore never been easier nor cheaper as today. Combine that with the advantages of the network effect, eFueling might be something of interest to your airline already.

Continue scrolling through this guide and learn more about the different facets and advantages eFueling can offer your airline.



10 BENEFITS YOU ACHIEVE WITH OPERATING ELECTRONIC FUELING

Benjamin Walther

If you search the web, you'll find hundreds of articles about airlines and fuel efficiency. Articles that focus on process improvements, new aircraft equipment, or entirely new engines and airplanes. And I'm pretty sure that most of the texts provide value and a reasonable approach.

So why another article about airline fuel efficiency? Well, I want to play this very frankly. You won't find the magic key to fuel efficiency in this article. There's no hack, no trick. Moreover, I'm convinced that other measures hold more significant potential in terms of fuel efficiency than the one you'll find here. The thing is: Realizing measures that lead to more considerable fuel efficiency –quite often– have one thing in common. All of them require a substantial initial investment. However, we all know that, due to the pandemic situation, airlines' financial capabilities are quite limited. But the good news is on the doorstep. Besides these prominent measures, airlines can still implement smaller tweaks. Improvements that probably won't drive efficiency at the same scale and won't realize multi-million savings. But improvements that still accounts for substantial savings and an enhanced efficiency – directly and indirectly. With this article, I want to

introduce one of those measures –called Electronic Fueling (eFueling) – and focus on the benefits it brings.

What's Electronic Fueling (eFueling) About?

So here's the background first. Electronic Fueling aims to digitize an airline's fueling process. That means today's manual procedures (fuel order, receipt, etc.) are transformed to become all-digital.

Accordingly, manual processes or face-to-face communication can be eliminated.

Therefore, a so-called data distribution platform connects airlines on the side, and fuel provider on the other side.

Subsequently, all fuel-related messages are solely exchanged via this platform. Here are some examples:

- Flight Plans
- Fuel order
- Process milestones (order accepted, fueling starts, etc.)
- Fuel receipt
- Acknowledgment
- No Fuel Indicator
- etc.

Worth mentioning that Electronic Fueling is also part of IATA's Fuel Standard Measures and relies on IATA messaging standard.

10 BENEFITS YOU ACHIEVE WITH OPERATING ELECTRONIC FUELING

How's Electronic Fueling Driving Airline Fuel Efficiency

The question now is, how does Electronic Fueling drive an airline's fuel efficiency? How does it contribute to lean processes and financial savings?

Like many other digital approaches, digitizing an airline's operational fuel process holds enormous potential. Potential in terms of enhanced efficiency

that an aircraft only earns money when flying. That's the reason why every airline is trying to reduce the turnaround time to an utmost minimum. Due to its digital nature, Electronic Fueling reduces the fuel-related process times. Here's an example: After using Electronic Fueling for several months, an airline (a major European carrier) started to analyze turnaround data. As a result, the airline observed a reduction in fueling-process time of 25%.



and cost-savings. But I don't want to leave you with those high-level buzzwords. That's why I compiled a list of 10 tangible benefits.

Let's have a detailed look at the benefits and how Electronic Fueling drives an airline's fuel efficiency.

1 — Enhanced Process Efficiency

Process efficiency always sounds good, doesn't it? But what does it mean in terms of Electronic Fueling? That's pretty easy to explain. Turnarounds are a critical part of an airline's operations. And it is no secret

To make that very clear and drive that point home: The airline reduced the duration of the entire fueling process by 25%.

25%

**TOTAL REDUCTION OF FUELING
PROCESS TIME**

10 BENEFITS YOU ACHIEVE WITH OPERATING ELECTRONIC FUELING

2 — Reduced Workload

That's probably the most evident benefit of a digital measure. Replacing manual processes with a digital alternative inevitably leads to streamlined and/or eliminated processes. That accounts for operational but also back-office processes. Cockpit crew can submit fuel orders much faster than today's manual process—same accounts for acknowledging fuel receipts. Additionally, there's no longer a need to forward fuel receipts to the back office manually. But also the back-office benefits from a digital electronic fueling process. Forget about the necessity to double-check invoices and uplifts manually. Indeed, that does not lead to direct savings in terms of fuel costs. Nevertheless, it holds the potential to reduce administrative and operational costs.

3 — Enhanced Quality

When operating a traditional fueling process, the manual work reflects a massive source for mistakes and errors. Especially when it comes to invoicing and receipts. Regularly these documents indicate wrong uplift figures, wrong flight numbers, etc. As a result, intensive quality checks are necessary at airlines to (hopefully) identify and correct these mistakes. With the implementation of an electronic fueling, an airline achieves two benefits:

- Due to an immense rise in data quality, there is no longer a need for additional (extensive) quality checks.
- The risk of wrong invoices and ultimately wrong (too high) payments are eliminated entirely.

4 — Cost Control

Many airlines that are relying on a manual fuel process report the problem of the wrong invoices. On top of that, there's always the potential of incorrect payments and, ultimately, loss of money. An electronic fuel process, first and foremost, gives you complete control of your costs. Since every piece of data is available digitally, you can eliminate invoice mistakes and the risk of paying too much.



SHARE OF FUEL-RELATED DELAYS AFTER INTRODUCTION

5 — Reduced Fuel Delays

Every delay minute is real money. That's why it is so essential for airlines to minimize delays to an absolute minimum. We are fascinated that one of our clients came up with data about the reduction of fuel-related delays after operating an electronic fueling process. Right from the beginning, the airline observed a significant reduction of fuel-related delays. This especially accounted for outstations. And to give you a very tangible example: Prior to the implementation of an electronic process, fuel-related delays accounted for 2% of all delays at AMS airport. From the first day of operating an electronic process, the airline observed a constant reduction of these delays. After operating for one week, the number of fuel-related delays dropped to 0%.

10 BENEFITS YOU ACHIEVE WITH OPERATING ELECTRONIC FUELING

6 — Fuel Efficiency Through Direct Savings

Many of the benefits listed here improve an airline's fuel efficiency and indirectly leads to cost savings. However, Electronic Fueling also holds the potential for immediate financial savings. With the No Fuel Indicator function, airlines can achieve substantial savings. The function enables the cockpit crew to swiftly send messages to the fuel provider, whether refueling is required. These messages are usually already sent once the aircraft takes off at the departure airport but can be updated while being en-route and finally confirmed once the plane is approaching at the destination airport.

But why's that important and how does that contribute to improved fuel efficiency?

Your fuel provider at an airport automatically sends a fuel truck to the gate or position your aircraft arrives at. And since they don't have the information they do this regardless of whether refueling is needed. Subsequently, your airline has to pay for the provisioning of the fuel truck. And from a fuel provider's perspective that entirely makes sense, since they had the effort to send a fuel truck to the position.

So here's the trick: If the cockpit crew can send a message that refueling isn't required, the fuel provider does not send a truck to the position. Quite simple, right? Subsequently, your airline isn't charged for the since the fuel provider hasn't provided any service.

And to provide some hard facts: By utilizing this simple functionality, airlines can quickly achieve 6 to 7 digit savings annually.



6 - 7 DIGIT SAVINGS ON AN ANNUAL BASIS

7 — Automation Potential

Once an airline operates an electronic fuel process, the potential for further automation is just one step away. And again, that accounts for many processes. Operational processes in the cockpit. But also back-office processes when it comes to invoicing, clearing, or even emission trading. Therefore, an electronic fuel process builds the solid fundament for a whole bunch of further automation and fuel efficiency measures.

8 — Fuel Efficiency Through Enhanced Analytics

Operating an electronic fuel process enables airlines to collect a vast amount of data. Data about fuel orders and uplifts but also process-related data (timestamps, etc.). This data reflects a set of information that hasn't been available so far. Thereby, airlines can execute numerous additional analytical measures to drive efficiency further.

10 BENEFITS YOU ACHIEVE WITH OPERATING ELECTRONIC FUELING

9 — Reduced Verbal/Manual Interaction (COVID-19)

This is a benefit that came up with the current pandemic situation but seems essential for many airlines right now. Due to a digital process, airlines eliminate manual and face-to-face processes. Thereby, airlines reduce a potential infection source. From recent talks, we know that this is one of the reasons why IATA is currently pushing airlines to implement electronic fueling processes.

10 — Swift Implementation

Finally, an essential benefit or part of Electronic Fueling – and that brings me back to the introduction of this blog post. Implementing an electronic fuel process isn't a big deal. Indeed, nothing comes for free. But compared to many other fuel efficiency measures, airlines achieve a positive ROI much quicker and without a substantial initial investment.



**THE BIGGEST PART
OF A DIGITAL
TRANSFORMATION
IS CHANGING THE
WAY WE THINK.**



THE COMPLETE eFUELING IMPLEMENTATION GUIDE

Benjamin Walther

There's always this one special moment when we discuss eFueling with a potential client. That moment when a specific question is asked. And nope, this is not about pricing. The question is about implementation. How does it work? How long does it take? How complex is it?

Quite often, I stand in front of the group of people when those questions are asked. And you can see a mixture of faces, from anxious to curious and bugged. Implementation of IT projects still have a bad reputation — especially in a business-to-business context. Expensive, complicated, time-intensive are just a few words I hear in that context.

And I guess that's why this question is so unique in meetings. It's not the price. A price is straight-forward, is fact-based, is negotiable. Contrary to implementation. From a client-point-of-view, implementation is nebulous, slippery, and hard to control.

Here Are The Good News — Implementing Electronic Fueling Is Easier Than You Expect

So let's put away all these negative thoughts. Actually, most of the airlines I've talked to are surprised when I give them

the answer to the above questions. Implementing an electronic fueling platform —in most cases— is super easy. Moreover, the effort for the airline is only little.

Let's quickly recap: An electronic fueling platform connects airlines and fuel providers. Accordingly, an implementation project aims to establish connectivity on both sides and seamless information flow. In that context, we can separate four scenarios that mainly influence the implementation.

Scenario 1 — Everybody's Ready!

Definitely the most favorable scenario. What does it mean in detail? We talk about an "Everybody's Ready" scenario when both the airline and the Into Plane Agent already operates a system that supports the AIDX message standard. LIDO is a prominent system used by many airlines that already supports the AIDX standard when it comes to airline systems. On the Into Plane, Agent-side SAP's Skypad is an example of an AIDX-ready system. However, many other systems support the AIDX message standard too. In that case, the implementation project simply consists of some configuration work and tests. Usually, the duration of such tests is 1-2 weeks. Besides that, nothing is required. That means configuring, testing, and let's go live!

THE COMPLETE EFUELING IMPLEMENTATION GUIDE

Scenario 2 — Connecting The Airline

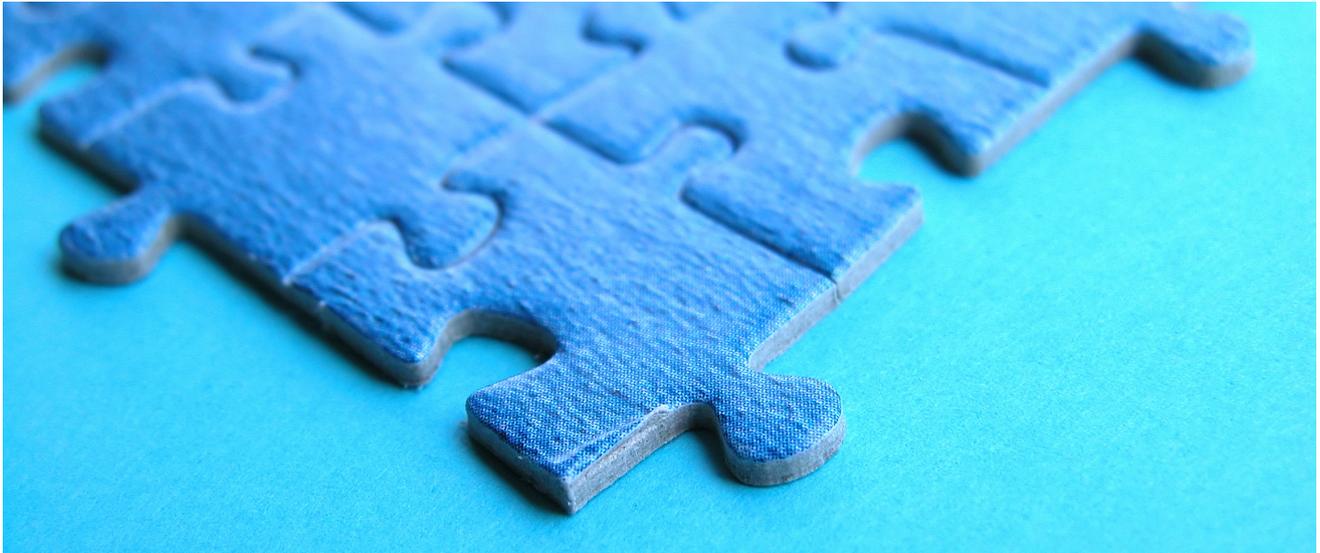
A situation we encountered several times when setting up electronic fueling with airlines is the following: The Into Plane Agent operates a solution that is eFueling-ready, but the airline lacks such a software. But no worries, this isn't a big issue. There are two options we can go for.

With the first one, the airline develops or acquires a software that supports the AIDX standard. However, this approach —usually

the duration of such tests is 1-2 weeks. Besides that, nothing is required. That means configuring, testing, and let's go live!

Scenario 3 — Connecting The Into Plane Agent

This scenario is the opposite of scenario number two. The airline operates a software solution that is eFueling ready, but the Into Plane Agent lacks such a solution. So what happens in such a case.



— is cost-intensive and takes time. The other alternative is in using the so-called "Pilot App" that comes with our eFueling solution. In that case, no additional development, testing, or configuration is needed.

Accordingly, and similar to scenario 1, the implementation project simply consists of some configuration work and tests. Again,

Usually, the airline coordinates with the Into Plane Agent and underpins the urgency of using an appropriate solution. Accordingly, the Into Plane Agent has to take care of the implementation. The negative aspect of the scenario is that the airline is in control of the process. Conversely, the airline has to rely on the Into Plane Agent.

THE COMPLETE EFUELING IMPLEMENTATION GUIDE

Although the airline isn't facing an additional investment, it is hard to forecast the project duration.

Scenario 4 — We Start From Scratch

Alright, here's the worst case. Neither the airline nor the Into Plane Agent operates an eFueling-ready solution. However, when taking a closer look at the scenario, it doesn't differ widely from scenario number three. Why's that? Because the airline, again, can simply use the Pilot App that comes with the eFueling Platform. Subsequently, only the Into Plane Agent has to be connected separately.

A Summary From An Airline's Point-Of-View!

From an airline's perspective, electronic fueling's technical implementation can be seen as a lean and swift process. In many cases, airlines already operate a system that is eFueling-ready. If this is not the case, the Pilot App represents a ready-to-use alternative covering the entire fuel process.

ELECTRONIC FUELING SOLUTIONS — A MARKET ASSESSMENT

Benjamin Walther

Airlines that decide to establish an electronic fueling process are, inevitably, confronted with the mother of all questions: "Which software shall we use?" And since electronic fueling, first and foremost, is a digitalization project, technology, software, and the right vendor certainly plays a vital role.

With this article, we want to provide a first overview of the available solutions types on the market. Moreover, we assess the solutions according to different aspects to help you identify the perfect match.

Of course, you may say, "wait, wait, wait — you are one of the potential providers! That assessment can't be neutral!" Well, we try to keep this article as neutral as possible. There's no intention to let our product shine and put others solutions in a bad light. On the contrary, this article is meant as a helpful guideline that enables you to assess which's the right direction to go.

An Overview Of Electronic Fueling Solutions

On a high-level, we can distinguish between three solutions type:

- Fully Integrated Platforms
- Dedicated eFueling Solutions
- Dedicated Fuel Provider Solutions

So, let's go down the solutions types and provide you with all you have to know.

Fully Integrated Solutions

What is it about?

Fully integrated solutions provide platforms that span across the entire fuel supply chain. Accordingly, it incorporates all activities and parties, like fuel producer, fuel supplier, logistic provider, into plane agent, airline, etc. Subsequently, electronic fueling is one (small) part of fully integrated solutions.

Provider

i6 Group (www.i6.io)

Pro's

If you are not solely looking for an electronic fueling platform but to digitize your airline's entire fuel supply chain (and beyond), fully integrated solutions should be your choice. Usually, the different modules are well-integrated with each other. Therefore, these types of solutions unleash their power, primarily when used across several processes.

Con's

From our point of view, there are three aspects to consider. First of all, fully integrated solutions aim to cover a wide variety of processes. That's the reason for the before-mentioned positive aspect. However, on the flip side, they might not have the best-in-class solution for every

ELECTRONIC FUELING SOLUTIONS – A MARKET ASSESSMENT

process. That's a simple trade-off. On top of that, fully integrated solutions come with inevitable vendor lock-in. Hence, it reduces an airline's flexibility to choose the desired solutions for different process of the value chain.

Dedicated eFueling Solutions

What is it about?

Contrary to fully integrated platforms, dedicated solutions are solely focused on one aspect: The electronic fueling process.

an airline's entire process chain. You don't have to stick to one platform across all processes but can select the best-fit. Second, since dedicated solutions are specialized in the electronic fueling aspect, functionality and quality are extremely good. Third, dedicated solutions are more comfortable and faster to implement in most cases since they focus on one isolated process.



Accordingly, those solutions' horizontal scope isn't that broad –compared to a fully integrated platform– however, the vertical functionality is usually more comprehensive.

Provider

Information Design One (www.id1.de)

Pro's

Three aspects to mention in that context. First, Dedicated eFueling Solutions provide a high level of flexibility when it comes to

Con's

Depending on the goals you want to achieve, some of the advantages can also turn into disadvantages. Flexibility can lead to additional efforts to align between systems and stakeholders. Additionally, if you are looking for a comprehensive tool – a big bang– dedicated solutions might be not the way to go.

ELECTRONIC FUELING SOLUTIONS – A MARKET ASSESSMENT

Fuel Provider Solutions

What is it about?

Although not that prominent, we still wanted to mention them in this context. Besides independent software providers, there are also fuel providers that offer electronic fueling platforms. From a functionality and process-coverage point-of-view, they are somewhere between fully integrated and dedicated solutions. That means they cover more processes than dedicated solutions but aren't that broad compared to fully integrated solutions. Same accounts for electronic fueling functionality: Probably slightly more than fully integrated but less than dedicated solutions.

Pro's

The most significant advantage solutions provided by the fuel provider lies in the fact that you don't have to bring in a new provider. Subsequently, there are only two parties (airline + fuel provider) involved when it comes to set up and operations.

Con's

From our point-of-view, there's one massive disadvantage when choosing a solution directly from a fuel provider. Actually, I would say it contradicts the idea of electronic fueling. So let's recap quickly: The idea of electronic fueling is to bring together airlines on the one side and fuel provider on the other side. The relevance and benefits of the platform grow with every additional fuel provider. Or in other words: The more fuel provider are connected, the more airlines will use –

which will lead to further fuel providers, and so on. This entire platform aspect –or call it network effect– doesn't exist for fuel provider solutions. Period.

Summarized

So what's the best electronic fueling solution? I would say there's no answer to that question – you have to define your goals and framework first. Questions you should answer in that context are, for example:

- Are we looking for a solution that enables electronic fueling or for a broader scope?
- How do we rate flexibility when it comes to software selection?
- Do we need to connect more than one fuel supplier?
- Are you looking for an integrated or open platform?

Based on your answers, you should have a clear picture of the direction you go.



**WE HAVE TO
RE-THINK
FUELING
PROCESSES
RADICALLY!**

4 SUCCESS STORIES YOUR AIRLINE CAN ACHIEVE WITH ELECTRONIC FUELING

Benjamin Walther

When we started to develop our solution to support Electronic Airplane Fuel Processes, we had a clear vision. From discussions with airlines and other stakeholders, we were highly convinced that it is possible to eliminate this manual process.

Moreover, we wanted to set up an all-digital process that helps to achieve various benefits. Besides the benefits we had in mind initially, we have been curious to find out what our clients think. That's why we sit together with them after having operated the platform for more than five years and received their input first-hand. As a result, here's a list of four success stories our clients have been able to achieve with operating the eFueling platform.

#1 Reduced fuel-related delays

Moving to a digital process and getting rid of the time-consuming manual process is always a source for efficiency improvements. However, it's always better to receive proven facts and figures on how the results are in real life. That's why we are fascinated that one of our clients came up with data about the reduction of fuel-related delays after introducing the eFueling platform. In general, the airline has been able to reduce fuel-related delays — especially at outstations significantly.

The most impressive result has been achieved at their outstation in Amsterdam (AMS). Before operating the digital eFueling process, fuel-related delays accounted for 2% of all delays at AMS airport. Right from the beginning, the airline was able to observe a constant reduction of these delays. After operating the platform for one week, the number of fuel-related delays dropped to 0%. Even more important, the airline was able to maintain this level constantly.

#2 Increased process efficiency

Turnarounds are a critical part of an airline's operations. And it is no secret that an aircraft only earns money when flying. That's the reason why every airline is trying to reduce the turnaround time to an utmost minimum. With digitizing the fueling process, one of our clients was able to reduce the required time for fueling at their outstations massively. After using the eFueling platform for several months, the airline started to analyze turnaround data. As a result, the airline was able to observe a reduction in fueling-process time of 25%.

#3 Improved data quality

Another success story that has been reported by one of our clients is about increased data quality. When operating a traditional fueling process, the manual work reflected a massive source for mistakes and errors. This, especially

4 SUCCESS STORIES YOUR AIRLINE CAN ACHIEVE WITH ELECTRONIC FUELING

account to invoice and receipts. Regularly these documents reflected wrong uplift figures, wrong flight numbers, etc. As a result, intensive quality checks were necessary in order to identify and correct these mistakes. With the implementation of a digital process, the airline was able to achieve two benefits: Due to an immense rise of data quality, there was no longer a need for additional (extensive) quality checks. The risk of wrong invoices and ultimately wrong (too high) payments were eliminated entirely.

#4 Direct Cost Reduction

By utilizing the No Fuel Indicator function, one of our clients was able to reduce fuel-related costs directly. As a major airline with a considerable number of daily flights, the savings account for more than 500,000 Euro – annually.



HOW THE NO FUEL INDICATOR CAN SAVED YOU THOUSANDS OF DOLLARS – ANNUALLY!

Benjamin Walther

Fuel costs are one of the most significant cost factors of airlines. According to IATA, the airline industry's fuel bill is estimated to have totaled \$188 billion in 2019.

That means fuel expenses account for almost 25% of an airline's operating expenses. For decades airlines have been trying to reduce costs by applying various measures: Process improvements, new aircraft, hedging, etc. Electronic Fueling (eFueling) helps airlines to optimize processes and save money – but isn't primarily about reducing fuel-related costs.

So bad news first: With eFueling, your airline's fuel costs won't vanish. However, during the last years with discussed with clients, how eFueling can contribute to reduce fuel-related expenses. Based on those discussions, we implemented an additional functionality with our eFueling solution. We like to call this functionality the "No Fuel Indicator (NFI)."

But what's this No Fuel Indicator about, and how does it help your airline to save money?

eFueling — the platform behind

In order to explain that, we have to introduce what our eFueling platform is about quickly. The main goal of our eFueling solution is to connect airlines and into plane agents/airports and provide a data exchange platform for both stakeholders. From an airline perspective, this data exchange platform is used to send fuel orders, receive process milestones from the IPA, and exchange delivery slips and receipts. The No Fuel Indicator reflects an additional functionality we've implemented, which covers a specific process. The core idea behind is that an aircraft (or to be precise the cockpit crew at the plane) is enabled to send messages directly to the Into Plane Agent at the destination airport whether refueling is required or not.

How does the no fuel indicator work

Our eFueling solution is connected to an airline's ACARS system. Subsequently, the cockpit crew can swiftly send an ACARS message to the IPA, providing information whether refueling is required or not. These messages are usually already sent once the aircraft takes off at the departure airport but can be updated while being en-route and finally confirmed once the aircraft is approaching at the destination airport.

HOW THE NO FUEL INDICATOR CAN SAVES YOU THOUSANDS OF DOLLARS – ANNUALLY!

How does that help to save money?

Many IPAs charge airlines for being available at the on-block gate/position – regardless of refueling is needed or not. And from an IPAs perspective that perfectly makes sense, since they had the effort to send a fuel truck to the position. However, if the cockpit crew can send a message that no refueling is required, the IPA does not send a truck to the position. Subsequently, the airlines are not charges since no the IPA hasn't provided any service.

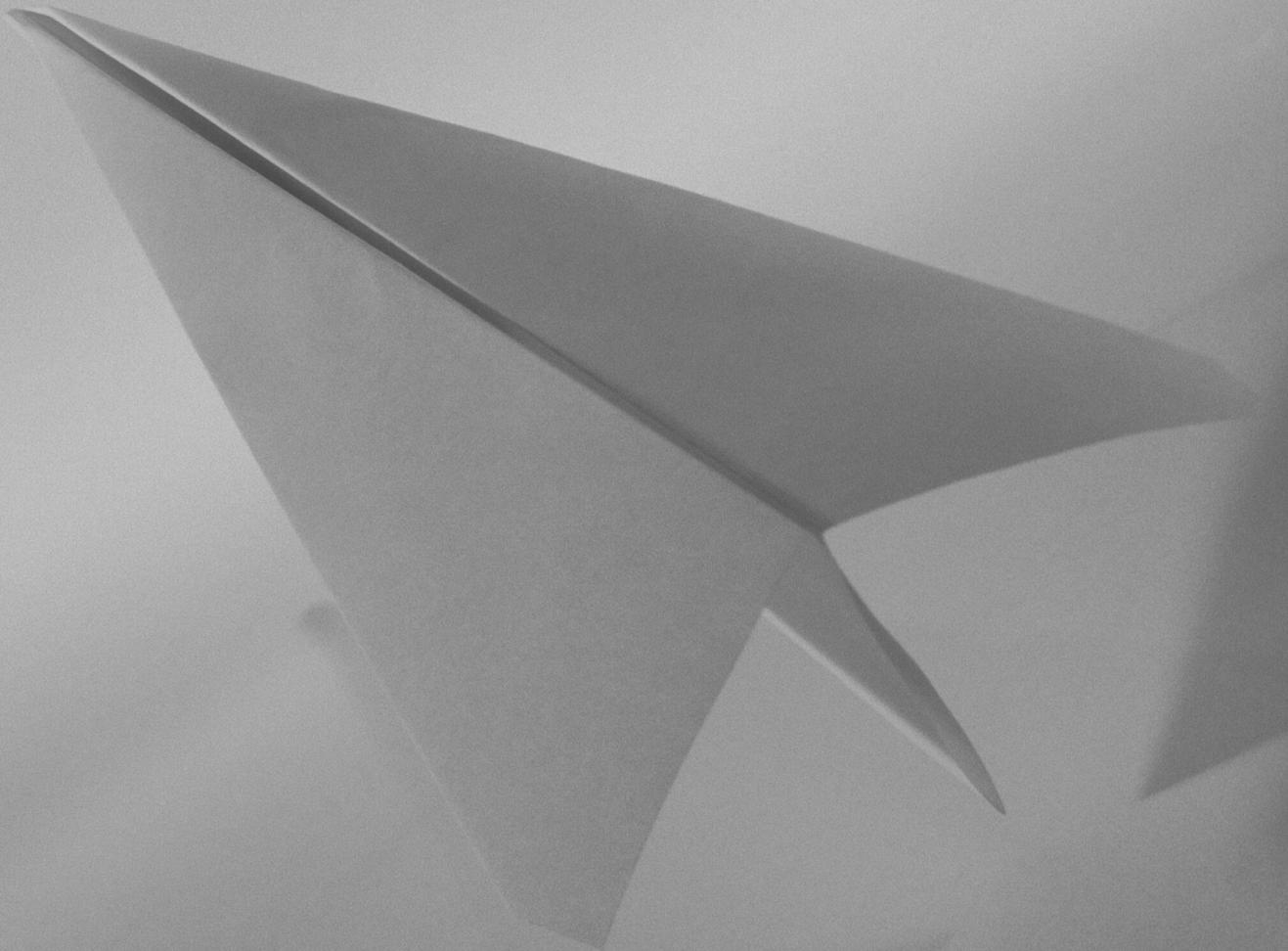
Does that make sense for all flights?

I guess you already know the answer: Of course not. Especially when talking about medium- and long-haul flights refueling is always required. Conversely, it only makes sense for short-haul or domestic flights. That means the approach is especially relevant for airlines operating a bunch of short-haul flights or a huge domestic network.

What about the bottom-line?

This strongly depends on the number of flights the No Fuel Indicator can be applied to – and the number of connected airports. Large network carriers can quickly achieve 6 to 7 digit savings annually. Compared to the enormous amount of fuel-related expenses, this probably sounds like peanuts. Nonetheless, you have to bear in mind that the savings can be achieved with almost no additional effort.

**THERE IS NO EFFICIENT
PROCESS IN THE ENTIRE
WORLD — THAT IS
PAPER-BASED!**



WHY THERE'S NEVER BEEN A BETTER TIME TO START WITH ELECTRONIC FUELING?

Benjamin Walther

Almost every airline I know is using some kind of fuel software. This is quite logical. On the one hand, fuel still represents a huge cost factor for airlines. On the other hand, there's a whole bunch of fuel software available on the market. And every fuel software aims for different goals when it comes to fuel efficiency.

Why Airlines Should Go For Another Fuel Software?

Airlines are undergoing super-tough times at the moment. The CORONA crisis hits almost every airline in one or another way. And as always in such situations, cost-cutting and saving programs are on top of the agenda. Call me crazy, but I think that this is exactly the right time to start exploring the potential of Electronic Fueling and related fuel software. I already wrote some articles about how Electronic Fueling and the fuel software behind works. On top of that, there are many posts available about the related benefits. Check out these blog posts to learn more about Electronic Fueling and fuel software. With this post today, I want to provide a more personal view. My thoughts why I think the timing is right for airlines to go all-in with Electronic Fueling.

A Fuel Software That Directly Realizes Cost-Savings And A Fast ROI

The crazy thing about a Electronic Fueling is the fact that it generates savings right from the beginning. Once an airline uses this fuel software it doesn't take months or years. On the contrary, due to reasonable setup costs, a positive ROI can be achieved super-quickly. That means Electronic Fueling helps to secure the bottom-line, especially during these challenging times — within a very short time.

Super-Low Risk

From a financial standpoint, the related risk is very low. Many Electronic Fueling solutions offer monthly subscription models. Accordingly, no substantial initial investment is needed. And that's exactly why I think deploying this type of fuel software project during these challenging times is still reasonable and makes sense. I would even go that far and call it a "must" when looking at the potential savings.

Perfect Time To Change Processes

From discussions with airlines, I observed two things: Many of them stopped large, cost-intensive projects, and many reduced the number of flights and parked aircraft. Super-bad situation for the airline.

WHY THERE'S NEVER BEEN A BETTER TIME TO START WITH ELECTRONIC FUELING?

Nonetheless—and sorry to say that—an optimal situation to start with Electronic Fueling and the implementation of a fuel software. First of all, manpower shouldn't be a problem. Secondly, it is much easier to implement such a process in less operations-intensive times.

Savings Increases Once The Operation Is Going Back To Normal

Implementing a fuel software and setting up Electronic Fueling during these times can be compared to investing in a widely underpriced stock. Although you achieve positive results right from the beginning, savings will steadily grow once operations are back to normal and start growing again. And here's the fun part: You don't have to do anything then. Just like a stock price that is increasing. You can lean back and count the dollars the fuel software saves.

My Clear Advice: Start Exploring Electronic Fueling Now!

Summarized, I really think that there's no better time to start with Electronic Fueling and to deploy this fuel software. I strongly advise airlines to start exploring this field—you will regret it in a few years if you don't do that now.



AIRCRAFT FUELING PROCESS – WHY COVID-19 IS URGING THE DIGITIZATION?

Benjamin Walther

I am a big fan of digital aircraft fueling processes (eFueling) at airlines. If you are a frequent reader of this blog or podcast listener, this might not surprise you. During the last couple of months, I have been publishing content about digital aircraft fueling processes regularly.

Even at the dawn of COVID-19, I published an appeal for eFueling and why it's the right time for airlines to go all-in. The reasons were quite evident at that time: low investment, scalable savings, swift implementation during reduced operations, etc. And each of the aspects is still relevant more than ever.

Digital Aircraft Fueling — This Is No Longer About Financial Savings Or Efficiency Only!

However, there's one aspect I neither considered nor observed at that time. And this aspect isn't primarily related to financial savings or efficiency. So here's a little backstory first. I lately had a chat with an IATA representative. He provided some very interesting insights into IATA's current work. As you can imagine, they are working day and night to support airlines on all possible levels. Initially, this chat wasn't about aircraft fueling processes. Among other topics, we also discussed

necessary measures airlines have to implement to provide passengers with a maximum of safety regarding the pandemic. In that context, he also mentioned that IATA is analyzing airlines' operational process chain very thoroughly. Why? They want to identify each process step that requires a personal interaction of two or more persons. For each of the identified processes, IATA is urging airlines to implement digital alternatives. The underlying goal is evident and essential. Through reduced personal interactions and established digital processes, potential COVID-19 infection sources are minimized. This was interesting to hear. Although this totally makes sense, my thoughts have been centered around passengers so far.

Personal Interaction Still Is An Integral Part Of The Aircraft Fueling Process

At that moment, scales literally fell from my eyes. When taking a look at the aircraft fueling processes of many airlines, the dominance of manual processes is apparent. Personal and verbal communication between the cockpit crew and fuel provider is standard. Additionally, fuel receipts are usually paper-based and a face-to-face handover is standard. In pre-COVID times those manual aircraft fueling processes represented a source for

AIRCRAFT FUELING PROCESS – WHY COVID-19 IS URGING THE DIGITIZATION?

optimization – especially in terms of quality and process efficiency. But the pandemic changed everything. In today's world, those manual, face-to-face processes are no longer just a source of inefficiency. Even worse, they are a potential source of infection. Due to that reason, a digital aircraft fueling process won't be a nice-to- or should-have in the future. On the contrary, airlines that take COVID-19 seriously have to consider a digital fueling process as a must-have.

How Does A Digital Fueling Process Help Airlines?

As already mentioned, a digital aircraft fueling process holds a wide variety of benefits in terms of efficiency, quality, and financial savings. If you want to find out more about these aspects, you should check out some of our previous blog posts. However, when talking about COVID-19, a digital aircraft fueling process holds an absolute killer-argument: It eliminates manual and verbal processes completely.

- With a digital aircraft fueling process, the distribution of fuel orders is completely digital.
- The fuel provider can provide process milestones digitally.
- Fuel receipts and acknowledgments are also exchanged digitally.

IATA To Add Digital Signature To Electronic Fueling Message Standard

Additionally, to support airlines in the best possible way, IATA currently discusses an

official enhancement of its eFueling message standard. The add-on contains the support of digital signatures enabling the cockpit crew to acknowledge receipts even easier.



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HOW A MOBILE APP CAN FLEXIBILIZE YOUR FUELING PROCESS

Robin Weissgerber

In today's world, we use mobile apps for nearly everything. We order food, check our bank accounts, or order a ride. In short, we use our smartphones to communicate with others. The way we communicate definitely changed over the last decades.

In fact, this change was heavily influenced by the advancements in mobile technology. Today, calling or texting someone is just a few swipes and touches away. This tremendous technological advancement enables us to rethink communication in many different areas and promotes this change even further. It should encourage us to look for new fields of application every day.

Acceptable In The 80s

In my opinion, the aircraft fueling process is one of those areas that needs to rethink their approach to communication fundamentally. For every flight, the pilot and the IPA need to communicate several times, but they are still doing it like its 1980s. Once the fuel order is typed into the system, there is not much flexibility to adjust it to the actual situation. One reason for that is the very scattered IT landscape, which does not allow for standardization. However, a digital communication hub would solve that

problem and pave the way towards a more flexible communication between all parties.

Catch-Up! — Enable Real-Time Communication Today!

With the introduction of a mobile app that works as an add-on to the hub, a new communicative flexibility level could be achieved. Last-minute changes or individual status updates could be communicated to the fueler directly to adjust to possible delays or special requirements like the need for additional fuel trucks to speed up the process. It could also work the other way around and allow the fueler to inform the pilot about delays and operational details.

This new and instant communication method enables both parties to make ad hoc changes to the situation that cannot be planned. However, if done correctly, those small integrated into the aircraft fueling process, the new communication channel can yield even higher returns.

The Simple One-App-Fits-All-Approach

However, to capitalize on these improvements and savings, implementing such a new communication app has to be as swift and cheap as possible. The good thing is that almost all pilots nowadays are

HOW A MOBILE APP CAN FLEXIBILIZE YOUR FUELING PROCESS

equipped with a mobile device to manage their flights. Therefore, a potential app simply needs to be compatible with the operating system of these devices.



Developing a native app or integrating the functionality on one of your existing apps might be an option, but those approaches are expensive and time-intensive.

I recommend the approach to a progressive web app, which functions like a shortcut to a web application but looks like an app on your home screen. Those apps are much easier to develop and maintain. Additionally, they have the advantage that they immediately work on every web-enabled device and could also be used by external pilots flying for your airline.

We all know what difference it makes if we can clearly communicate with your counterpart in a crucial situation. Those little adjustments that can be made by simply talking to each other and exchanging information often prove golden in the long run.

I am absolutely convinced that this also applies to the dynamic of the aircraft fueling process. Moreover, it holds the opportunity to generate massive improvement and cost savings.

So, there we have it! Just another way how you can use the principles of eFueling to better your processes and save money. You see, they are stacking up right now!

WHY THE NETWORK EFFECT IS GROSSLY UNDERRATED!

Benjamin Walther

Discussions about aviation fuel software are most often focused on functional aspects. Indeed, the functional spectrum of an aviation fuel software is essential. However, there's one aspect that is even more important than having the fanciest functionality: The network effect!

The network effect is so unbelievably powerful. Unfortunately and surprisingly, at the same time the network effect is also disproportionately underrated by airlines when it comes to aviation fuel software.

What Is The Network Effect About?

In case you haven't heard of this theory before, let me quickly explain. In my simple words, the network effect describes the value an additional user of goods or service brings to other users (check Wikipedia for detailed description). Although there are different types of network effects, the telephone is probably

the most prominent example. The value of a phone can be defined by the number of people that are connected to the phone network – or, in other words, the number of potential connections.

Let's make a quick trip back in time when the telephone was invented.

Well, the first two people who owned a phone didn't enjoy the network effect. Simply because there was precisely one person they could call. With the third person, the number of possible connections increased to three. Still not amazing, right. Let's take a few steps forward: Once ten people owned a phone, the number of possible connections rapidly jumped to 45. Not bad! But things get better. Once we reach 100 phone owners, the number of possible connections explodes to 4,950. With 1,500 owners, the number of possible connections already exceeds 1 Million. Here's a chart providing that visually underpins the effect.



WHY THE NETWORK EFFECT IS GROSSLY UNDERRATED!

But Why Am I Telling You All This And How Is It Connected To Electronic Fueling?

After my recent posts about Electronic Fueling Processes, many discussions with people from airlines all over the globe evolved. It was exactly in those discussions when I realized that many airlines look at Electronic Fueling solely from a functional-point-of-view.

You all know those discussions. Can the software do this? Is it possible to do that? Meets the functionality our specific requirements? And on, and on, and on. Don't get me wrong. Of course, it is important to be aware of the functionality. This is essential in order to assess if an aviation fuel software serves the purpose. But! Coming back to my initial phone example: You can own the best, fanciest, coolest smartphone. If there's only one person you can call your benefit is quite limited.

Let's Translate The Network Effect To Electronic Fueling

Together with seven clients, we've already connected 45 airports to our Electronic Fueling solution. In fact, that didn't happen overnight and was only possible due to our fantastic clients. Accordingly, that means if an additional airline starts with Electronic Fueling and connects its main base (in case it isn't Electronic Fueling ready), the airline can also directly use Electronic Fueling at 45 other airports.

On the other hand, all of the existing clients can now use Electronic Fueling at one more station.



So, with one new airline (resp. connected airport) the number of potential connections grew by 53! (45 existing for the new airline + the new connected airport for the new airline and the seven existing airlines = 45 + 1 + 7 = 53)

Indeed, due to the supply/demand setup, the network effect is slightly different and less significant compared to the phone example.

WHY THE NETWORK EFFECT IS GROSSLY UNDERRATED!

Nevertheless, due to the high amount of already connected airports, additional airlines already enter a considerable network. On the other side, one additional connected airport brings enormous value to many existing, already connected airlines. And this “double-sided” effect significantly grows with every new airline and subsequently connected airport.

The Network Effect Provides Value To Existing And New Electronic Fueling Airlines

From my point-of-view, the existing network of eFueling-ready airports provides an enormous, additional potential to airlines that are currently considering implementing a digital fueling process. Compared to the direct benefits, which can be realized at their main hub, this network effect is most often grossly underrated. Therefore, airlines should definitely take into account this massive additional benefit.

Information Design Presents

A hand silhouette on the left side of the frame points towards a black cursor arrow in the center. The background is a sunset sky with a crescent moon in the upper right. The text 'FUTURE FUEL LAB' is overlaid in white, bold, sans-serif font.

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47 AIRPORTS THAT ARE CONNECTED TO THE DIGITAL FUELING PROCESS

Benjamin Walther

eFueling stands and falls with connected airports. You can operate a best-in-class eFueling solution — as long as you don't manage to connect a considerable amount of destination airports to your solution, the effort won't pay off. Conversely, with every airport, you get to connect to your eFueling solution, the benefits will rapidly increase.

However, connecting airports—or to be precise, Into Plane Agents at airports—sometimes isn't that trivial. Especially since Into Plane Agents have to carry out some efforts to be "eFueling-ready". With our eFueling solution, we paid attention to both right from the beginning: Developing a cutting-edge software and connecting as many Into Plane Agents as possible.

Up to now, we have successfully connected Into Plane Agents at more than 47 airports to our solution. Subsequently, that means once an airline starts to use our solution, the airline is directly enabled to utilize eFueling at all connected airports. Based on that fact, one of the most asked questions we receive is about the airports which are already connected to our eFueling solution.

Therefore, we want to give you an overview of already connected airports. However, worth to mention that the list of connected airports is a steady growing list, and we keep updating it regularly.

Turn the page to find the entire list of connected airports.

47 AIRPORTS THAT ARE CONNECTED TO THE DIGITAL EFUELING PROCESS

European Airports

Currently, our eFueling solution is available at 28 European airports, covering most of the primary European hubs.

- **Amsterdam (AMS)**
- **Stockholm (ARN)**
- **Brussels (BRU)**
- **Budapest (BUD)**
- **Cologne (CGN)**
- **Copenhagen (CPH)**
- **Dusseldorf (DUS)**
- **Rome (FCO)**
- **Frankfurt (FRA)**
- **Goteborg (GOT)**
- **Birmingham (BHX)**
- **Lisbon (LIS)**
- **Geneva (GVA)**
- **Hannover (HAJ)**
- **Leipzig (LEJ)**
- **London (LHR)**
- **Munich (MUC)**
- **Nuernberg (NUE)**
- **Oslo (OSL)**
- **Bukarest (OTP)**
- **Berlin (TXL)**
- **Vienna (VIE)**
- **Zurich (ZRH)**

US Airports

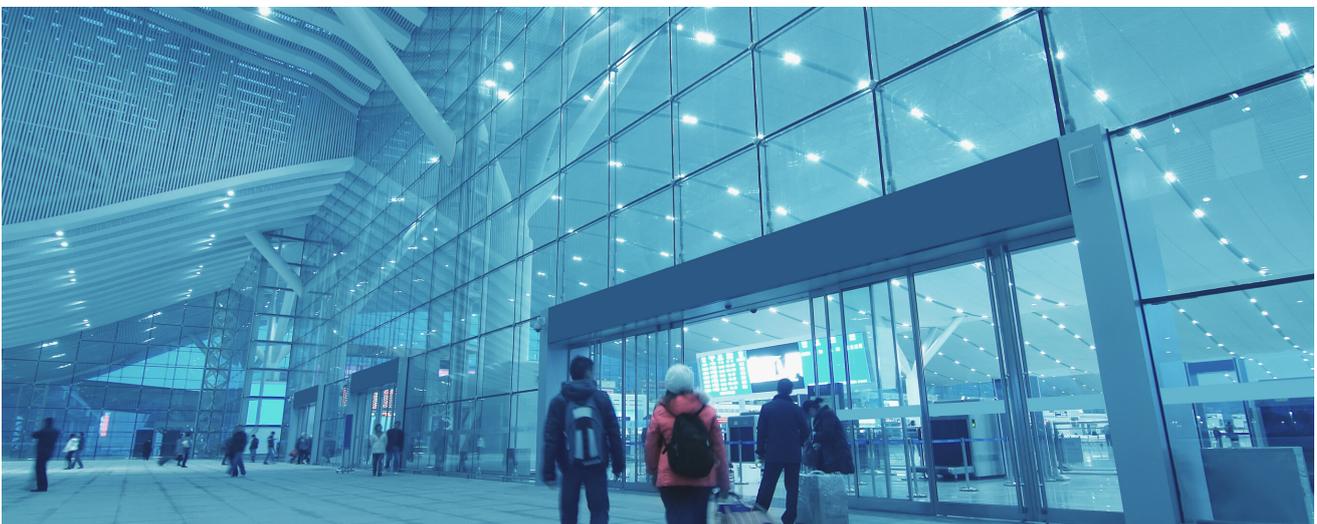
Currently, our eFueling solution is available at 18 airports in the US, covering most of the primary hubs.

- **Washington (IAD)**
- **New York (EWR, JFK)**
- **Boston (BOS)**
- **Philadelphia (PHL)**
- **Detroit (DTW)**
- **Charlotte (CLT)**
- **Atlanta (ATL)**
- **Miami (MIA)**
- **Orlando (MCO)**
- **Tampa (TPA)**
- **Chicago (ORD)**
- **Denver (DEN)**
- **Dallas (DFW)**
- **Houston (IAH)**
- **San Fransisco (SFO)**
- **Los Angeles (LAX)**

Asian Airports

Asia is currently our focus area and more airports to be added shortly.

- **Hong Kong (HKG)**
- **Singapore (SIN)**



HOW ELECTRONIC FUELING CAN IMPROVE DOWNSTREAM PROCESSES

Benjamin Walther

No doubt, the primary goal of electronic fueling is to digitize an airline's operational fuel process. Nonetheless, operating an electronic fueling solution improves, enables, and streamline a whole bunch of downstream processes.

A little backstory: I recently joined a meeting regarding electronic fueling with a potential client from Asia. And we really needed a huge room because so many departments wanted to join:

- Fuel Department
- Operations Department
- Environmental Department
- Contracts & Procurement Department
- IT Department
- Data Analytics Department

Now, a question that might run through your head is, "what the heck have those departments to do with electronic fueling?" The trick is that most of them are not needed to implement or operate an electronic fueling process. In that case, we are OK with the Operations, IT, and procurement department.

However, as mentioned initially, electronic fueling builds the foundation to improve and enable many downstream processes. That's why so many colleagues from different people joined and wanted to know more about electronic fueling.

The Downstream Processes In Detail

So, let's get into detail and have a closer look at the processes or activities that benefit from a digital fueling process.

Emission Trading Scheme (EU-ETS)

I want to be frank: There's no airline in the world that truly, truly loves the European Emission Trading Scheme. At least I have never met one. And I can tell you I've met representatives from many airlines. However, EU-ETS is a requirement, and airlines have to deal with it. Therefore, the goal for every airline should be to make this task as efficient as possible. In this context, electronic fueling reflects an essential pillar to streamline the entire EU-ETS process. Why's that? You may read the answer several times in this document: Because of electronic fueling's digital nature.

To quickly recap: Electronic fueling eliminates manual process and paperwork and establish an all-digital fueling process. Accordingly, that means that a considerable part of the data required for ETS reporting is available digitally. There's no longer the need to collect fuel figures manually. Subsequently, the entire EU-ETS process is boosted to a new efficiency level. On top of that, and due to eliminating the manual process, the process quality is improved additionally. This helps to avoid potential fines by the competent authority and streamlines the regular verification process.

HOW ELECTRONIC FUELING CAN IMPROVE DOWNSTREAM PROCESSES

Data Analytics

I'm not too fond of this sentence because it is definitely used too often. However, it is so true: Data is the new gold! Unfortunately, at many airlines, the fueling process still is a blind spot when it comes to data.

Therefore, digitizing an airline's fueling process also means generating an entirely new source for super-relevant data: Fuel figures, fueling times, process milestones, etc.

The possibilities for your data analytics are immense. Here are a few examples:

- What's the exact reason for fuel-related delays?
- What's the impact of the fuel process on the entire turn-around process?
- Is there a critical path during the fuel process that impacts the entire turn around?
- Are there variations according to different aircraft types or airports?
- And so much more...

Invoicing & Clearing

This aspect goes hand-in-hand with EU-ETS. Many airlines that rely on a manual fuel process report issues with wrong invoices. On top of that, there's always the potential of incorrect payments and, ultimately, loss of money. An electronic fuel process, first and foremost, gives you complete control of your costs. Since every piece of data is available digitally, you can eliminate invoice mistakes and the risk of paying too much.

Moreover, electronic fueling drives the complete invoicing and clearing process's efficiency due to its digital nature. There's no longer a need for manual input of, copying paper, or manual cross-checking. Welcome to the new world :)

Fuel Provider Management

Here's another relevant process. Actually, this is based on the aspects mentioned above of data availability. Indeed, every airline assesses its fuel provider regularly and re-news or re-negotiate contracts. With a proper data foundation, this process is both more efficient and fact-based.

- Did the provider meet the SLAs?
- What's the on-time performance of a provider?
- How often were wrong invoices sent in?
- Etc.



There are many extremely relevant questions to discuss and to bring to the table. Therefore, a comprehensive set of data helps enormously to underpin a standpoint.

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EVERY WEEK I'M HOSTING A VIDEO SESSION AND ANSWER FIVE SUPER-RELEVANT QUESTIONS. FROM KPIS TO BUSINESS INTELLIGENCE, CONTENT, AND INNOVATIVE THOUGHTS. DON'T MISS THAT UNIQUE CONCEPT – AND A WHOLE BUNCH OF VALUABLE, INSIGHTFUL, AND SOMETIMES CONTROVERSIAL ANSWERS.



HOW ELECTRONIC FUELING REDUCES YOUR AIRLINE'S FUEL COSTS

Benjamin Walther

Fuel costs still represent the main cost driver for airlines. This hasn't changed over the last decades. Nonetheless, during the last three to five years, cost-saving programs weren't a top priority — at least for many airlines. Indeed, many airlines ran efficiency programs and aimed to deliver the product at competitive prices. However, the focus for many carriers was about growing and satisfying the sheer endlessly increasing number of passengers.

All of a sudden, in times where COVID-19 dominates the news, many airlines see themselves confronted with declining passenger numbers, a negative financial outlook, and an increasingly challenging future. Accordingly, cost-cutting programs are back on the agenda. And besides other measures, fuel-related cost reduction is extremely essential for airlines once again. After talks with airlines over the last couple of weeks, it turns out that most of them reduced or even stopped ongoing and planned investments. That, of course, differs from airline to airline. That is quite logical since the impact is different depending on the business model and served world regions. Nonetheless, many airlines I've talked to decided to put technology projects on the touchstone and stopped or paused them.

Electronic Fueling Process — A Quick-Win to Reduce An Airline's Fuel Costs?

Here, the interesting part starts. Conversely, to the above, I observed that airlines intensified their efforts concerning electronic fueling processes. Moreover, I talked to airlines that are planning to kick-off projects in that area right now. Although that seems confusing at first sight, it turns out to be the right move when thinking twice. Why's that? Because an electronic fuel process —contrary to many other projects— holds a genuine and practical cost savings potential for airlines. So let's have a detailed look at cost savings an electronic fuel process holds for airlines.

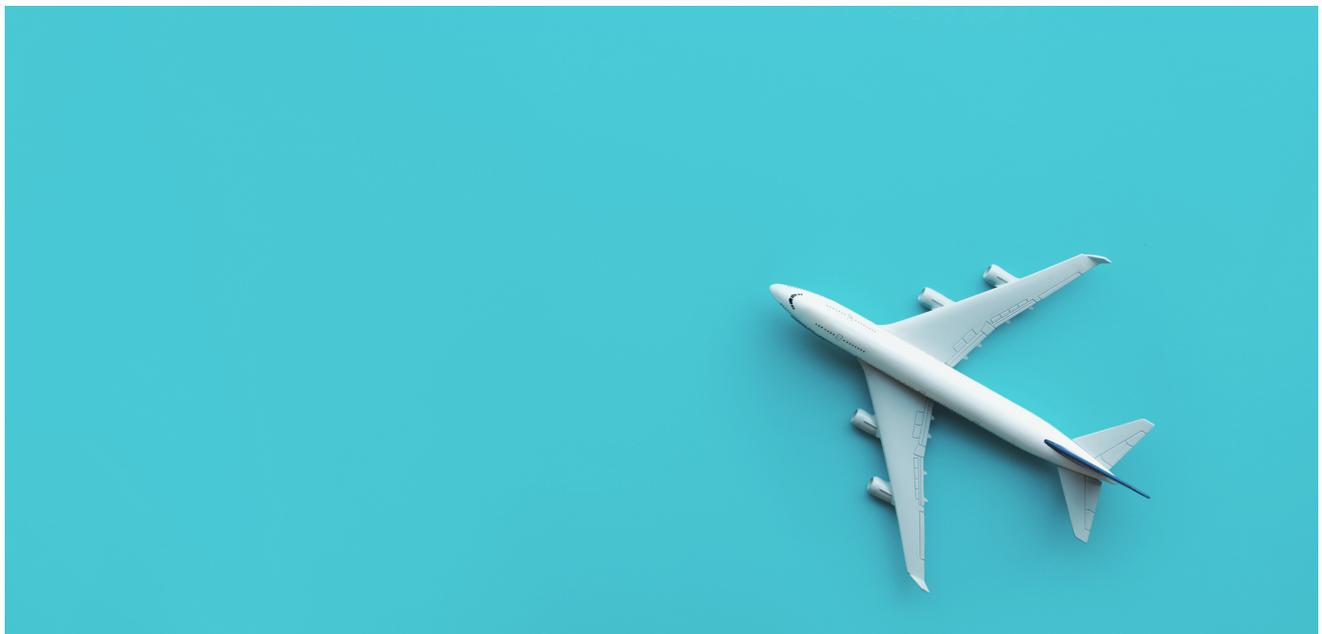
Reduced Fuel Costs Due To Minimized Fuel-Related Delays

Moving to an electronic fuel process and getting rid of time-consuming manual processes is always a source for airlines to further improve efficiency. One of our clients, a large European network carrier recently came up with some quantified numbers. In detail, that airline analyzed the reduction of fuel-related delays after introducing an electronic fuel process. In general, the airline has been able to reduce fuel-related delays — especially at outstations significantly. The most impressive result has been achieved at their outstation in Amsterdam (AMS).

HOW ELECTRONIC FUELING REDUCES YOUR AIRLINE'S FUEL COSTS

Before operating an electronic fuel process, fuel-related delays accounted for 2% of all delays at AMS. When starting an electronic fuel process the airline was able to observe a constant reduction of these delays. After operating the process for one week, the number of fuel-related delays dropped to 0%. Even more important, the airline was able to maintain this level consistently. Subsequently, as delay minutes always represent costs the airline calculated the contained financial savings.

Indeed, from an IPAs perspective that entirely makes sense, since they had the effort to send a fuel truck to the position. However, with an electronic fuel process, an airline's cockpit crew can easily send a message that refueling isn't required. Thus, the IPA does not send a fuel truck to the position. Accordingly, the airline is able to avoid fuel process costs. At the bottom-line large network carriers can easily achieve 6 to 7 digit fuel savings annually. Compared to the enormous



As a result, they were able to achieve 7-digit savings annually.

Reduced Fuel Costs Due To Reduced Provider Costs

An electronic fuel process actively helps to align processes between involved stakeholders – especially between airlines and the Into Plane Agent (IPA). Many IPAs charge airlines for being available at the on-block gate/position. And they do this regardless of refueling is needed or not.

Cost Savings Through Improved Data Quality

Increased data quality is an additional driver of direct cost savings that airlines can achieve by utilizing an electronic fuel process. When operating a traditional fueling process, the manual work reflected a massive source for mistakes and errors. This, especially account to invoice and receipts. Regularly these documents reflect wrong uplift figures, wrong flight numbers, etc. As a result, intensive quality

HOW ELECTRONIC FUELING REDUCES YOUR AIRLINE'S FUEL COSTS.

checks were necessary to identify and correct these mistakes. With the implementation of an electronic process, airlines achieve two main benefits:

- Due to an immense rise in data quality, there was no longer a need for additional (extensive) quality checks.
- The risk of wrong invoices and ultimately wrong (too high) payments were eliminated entirely.

What About The Required Investment?

The interesting part when it comes to electronic fuel solutions for airlines is the fact that these systems –most often– do not require a substantial initial effort. Conversely, the IT solutions are offered as subscription models that reduce the initial effort tremendously. Thereby airlines can reduce fuel savings swiftly and right from the beginning without a long-term ROI.

14 FREQUENTLY ASKED QUESTIONS ABOUT ELECTRONIC FUELING

Benjamin Walther

Since our latest articles about airline Electronic Fueling (eFueling), we've received several questions from you. That's why we thought it's time to do another rapid-fire question session. Therefore, we selected 14 most-relevant questions about Electronic Fueling.

1 — What's the difference between Electronic Fueling, Digital Fueling, and eFueling?

Before we dig into the details, this reflects the perfect question to start with. Some of you noticed that we are using different terms (eFueling, digital Fueling, electronic Fueling). And obviously —we apologize— this created some confusion. So, let's get that clarified: There's no difference between the three terms. eFueling is an abbreviation of "electronic fueling" and digital Fueling probably just sounds a bit fancier. Nonetheless, it is worth to mention that Electronic Fueling reflects a digitization approach.

2 — What is Electronic Fueling about

Electronic Fueling is aiming to digitize an airline's fueling process. That means today's manual procedures (fuel order, receipt, etc.) are performed entirely digital. Therefore, a so-called data distribution platform connects airlines on the side, and fuel provider on the other side. Accordingly, this platform is used to exchange all fuel-related messages.

Here are some examples:

- Flight Plans
- Fuel order
- Process milestones (order accepted, fueling starts, etc.)
- Fuel receipt
- Acknowledgment
- No Fuel Indicator
- Etc.

3 — What's required to use Electronic Fueling at an airline?

In terms of an airline, it is necessary to connect to a fueling data distribution platform. There are several approaches to do that. Airlines can connect their flight planning systems, ACARS, or EFBs. Additionally, the required fuel provider at an airport has to be connected too.

4 — Is it available at every airport?

No, not every airport, resp. fuel provider is eFueling-ready. Nonetheless, the number of airports is quite considerable and steadily growing. This document also contains a list of airports that are eFueling-ready. So, you might check it out for details.

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5 — How do airlines benefit from Electronic Fueling?

Actually, the benefits cover a wide variety of topics:

- Increased efficiency
- Increased data quality
- Reduced delays
- Financial savings
- etc.

We put together some real-life use cases from airlines using Electronic Fueling and the benefits they've achieved and incorporated that into this document too.

6 — Which airlines are currently using Electronic Fueling?

Unfortunately, we do not have a complete list of airlines that are using Electronic Fueling. However, here's a list of airlines using our Electronic Fueling solution:

- Lufthansa
- Swiss Airlines
- Austrian Airlines
- Eurowings
- Air Dolomiti
- Lufthansa Cityline
- Edelweiss Air
- Cathay Pacific

7 — How does IATA's fuel data standard relate to eFueling?

The IATA fuel data standard defines fuel message syntax. In simple words: It reflects the digital language to exchange fuel information. This XML standard, called AIDX, is available in a first version and continuously enhanced.

8 — What's the impact of COVID-19 to eFueling?

A very interesting question. Again, we've included an entire article about that topic to this document. Summarized: IATA is recommending to use Electronic Fueling to avoid face-to-face communication between the cockpit crew and the fuel supplier. Among other measures, this shall help to minimize potential infection sources.

9 — Which fueling process steps are covered by Electronic Fueling?

As mentioned earlier, Electronic Fueling covers the entire operational fueling process:

- Flight schedules
- Initial fuel orders and updates
- All process milestones
- Fuel uplift
- Fuel receipts
- Acknowledgments

10 — How are fuel orders submitted to fuel providers / into-plane agents?

As briefly described above, this is handled via a data distribution platform. For example, our solution (eFueling Hub) connects airlines and into-plane agents and takes care of message distribution and routing.

11 — Our main airports are currently not connected. What can we do?

In case you've checked the list of connected airports and couldn't find your hub / most important airport, it's time for a joint project ☹️ But seriously: We are trying to connect as many as airports as possible.

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However, sometimes it needs the initiative and support of an airline to connect an airport. From a technical point-of-view, this isn't a big deal. So, we're happy to discuss in case you'd like to see another airport on the list of Electronic Fueling-ready airports.

12 — I read about the No Fuel Indicator on your blog — how does that relate to Electronic Fueling?

The No Fuel Indicator is an add-on we've implemented in our solution. The core idea is that the cockpit crew sends out a message to the fuel provider in case refueling is not required. By doing so, airlines can reduce fuel-related costs that occur.

13 — Does eFueling support digital signatures?

Not yet. IATA is currently driving this initiative. We plan to implement that as soon as the message format gets updated.

14 — Where can I find more information about Electronic Fueling?

IATA is definitely a good source. If you prefer a face-to-face chat, just get in touch with us.



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