Travel Planning 2020: The Journey Toward Market Prosperity

By harnessing Code Halo thinking, travel and hospitality companies can transform their business models by offering an automated and customized trip planning experience, ushering in a new era for the travel industry.
Executive Summary

Travel planning has changed radically in the last decade, thanks to the Web and social media. However, the research, scheduling, budgeting and booking processes, even for a simple three-day trip, are still labor-intensive and time-consuming. But by 2020 – if the current pace of consumer digital activity and technology advancements continues – travelers can expect a much more streamlined and personalized approach to how they plan vacations and trips. By that year, the capabilities will be in place for intelligent engines to automatically develop customized trip plans by aggregating far-flung pieces of data that travelers either provide outright or can be collected through their digital activities.

This automated personalization capability will be driven by intelligent algorithms that process a plethora of implicit and explicit data about booking availability, destination preferences, spending habits and scheduling needs. Without asking a single question, these planning engines will rely instead on available information and the digital activities and behaviors of individuals, organizations and intelligent devices across the travel and hospitality ecosystem.

In this way, hotels, airlines and travel intermediaries will join the many other industries in which innovators (i.e., Amazon, Google, Pandora) are harnessing consumers’ digital footprints – what we call a Code Halo™ – to disrupt and reshape how business is done. Code Halos form not only around people; they also surround organizations and devices. In the context of today’s consumers, many if not most have vibrant online lives, sharing their digital information with travel agencies, social media Web sites, search engines, banks, healthcare players, online communities, e-commerce sites and more. These Code Halos also form around companies (where travelers work), hotels (where travelers stay) and travel intermediaries (where they often book trips) – and beyond.
When Code Halos “collide,” they create insights, or “meaning.” For instance, the brand and type of a hotel or destination can connect to form a destination Code Halo, which reveals the place and the kind of travelers it attracts. (For more on Code Halos, please see our white paper, “Code Rules: A Playbook for Managing at the Crossroads,” or our recently published book, Code Halos: How the Digital Lives of People, Things and Organizations Are Changing the Rules of Business.)

The biggest challenges are the data privacy concerns and regulatory changes that are bound to emerge in the evolving travel industry landscape, which is poised to reach $10.5 trillion in GDP by 2023. But companies that ignore the vital signs exhibited by the early adopters of Code Halo thinking, such as the ability to predict customer preferences and expectations, may find it hard to survive the travel industry’s ongoing transformation. The first glimmers of disruption may be sporadic, but as the new business models attract increased customer acceptance, the industry will gradually be defined by seamlessly integrated travel planning engines.

This white paper offers insights into the drivers of change that are transforming the travel industry and how travel providers can harness Code Halos to lead the way toward a more fruitful future for all.
Trip Planning: Today — and Tomorrow

Prior to the late ‘90s, before Google launched its search engine, it would have been impossible to conceive how such a capability would become an everyday verb in the current vernacular. Similarly, it’s difficult now to imagine how and where an intelligent travel planning system would fit into today’s always-on, comparative search engine world. Today’s travelers must seek options from a range of channels, designed for use by a multiplicity of devices to make well-informed decisions at every stage of the trip planning journey.

Consider that planning a trip involves four activities: Determining the travel timeframe (when), deciding on the destination (where), figuring out how much you’ll spend (budget) and making reservations (booking). Although technology has automated some of these steps and dramatically improved the ease of information access, much of the process is still done manually, and there is no single entity that coordinates all four activities. As a result, travel planning is still a time-consuming process, even for a short trip; in our anecdotal survey of our employees, more than 80% of travelers spend one to two weeks planning a simple three-day trip.

Let’s consider the four stages of travel planning in terms of the technology available now vs. how the process could be improved through the use of Code Halos and commonly used technologies that are radically changing how we live and work, including social, mobile, analytics and cloud technologies, or the SMAC Stack™.

Step 1: When

- **Determine timing:** Travelers first need to determine the optimal departure and return dates that work best for everyone in their group, based on budget, deals available and individual schedules.

- **Technology currently used:** Although schedule information is often digitally accessible, there is still much manual labor involved with accessing various calendars, identifying holidays and determining who in the travel party can get time-off, when.

- **A possible approach, using Code Halo thinking and SMAC technologies:** This step could be automated via a schedule-aggregating capability that consolidates everyone’s calendars, availability and holidays into a single view.

Step 2: Budget

- **Determining cost:** Based on available funds and credit lines, travelers determine their travel budget.

- **Technology currently used:** Technology has made it much easier to access information on various bank and credit card accounts, as well as determine future payables and receivables; however, gathering all this information is still labor-intensive when deciding on the travel budget.

- **A possible approach, using Code Halo thinking and SMAC technologies:** This step could be automated via a budget management capability that automatically analyzes account statements, spending patterns and cash flow to develop a budget.

Step 3: Where

- **Determining location:** When travelers want to try a new destination, it can be daunting to identify a location that meets the expectations and interests of everyone in the travel group.
Technology currently used: Thanks to the Web and social networking, ample information is available on nearly any destination in the world, along with opinions, photos, video tours and reviews. Travelers can ask for recommendations from friends on social sites, or select a place based on online promotions and offers. But the data deluge is a two-edged sword: It’s easy to spend hours reviewing all the information available and still not reach a conclusion.

A possible approach, using Code Halo thinking and SMAC technologies: This step could be automated through a capability that dynamically packages promotions based on group preferences.

While they are far from delivering the intelligent travel planning capabilities that we’ve described, travel companies have made great strides in recent years with big data and analytics techniques.

Booking

Researching and making reservations: Finally, travelers need to identify the best-price supplier and book reservations, whether online or through an agent.

Technology currently used: There is a plethora of Web sites and travel agents through which travelers can book their trip with a few mouse clicks, but they still need to manually analyze the options and optimize the when, where, budget and mode of travel.

A possible approach, using Code Halo thinking and SMAC technologies: This step could be automated through an intelligent planning engine that optimizes booking options based on the previously mentioned capabilities: schedule aggregation, dynamic packaging and budget management.

Factors Driving Change

Such an intelligent planning engine clearly does not exist today; however, its origins are already in the works, and a key driver is current consumer use of technology. Consumers are quickly adopting new technologies across the SMAC Stack, as they are made available from travel and hospitality providers, including mobile check-in, electronic boarding passes and prepaid e-cards. Consider that roughly 70% of business travelers use mobile apps and software to stay connected, and both leisure and business travelers increasingly use smartphones in the travel planning and pre-arrival process.

According to our annual travel study, more than 45% of travelers rely on social media to explore deals and seek advice from their friends and family for travel. Approximately 33% use social to share their travel plan or booking information within their network. Mobile devices themselves are increasing exponentially in processing power, all of which contributes to 2.5 quintillion bytes of data created every day by users throughout the world.

As users grow more technologically savvy and engage in increasingly personalized and customized experiences by business innovators that have adopted Code Halo thinking, traditional approaches to getting and keeping customers are becoming stale. According to the 2013 Colloquy Loyalty Census, customer loyalty programs are losing their sheen, and active memberships are on the decline. As customers seek value beyond mere accumulated loyalty points and miles, hotels and airlines...
are compelled to better understand travelers’ activities and behaviors by analyzing their digital footprints. For example, by harnessing customer Code Halos, travel and hospitality companies can more accurately estimate future demand, provide better and more targeted promotions and deliver highly personalized experiences to travelers (see sidebar).

While they are far from delivering the intelligent travel planning capabilities that we’ve described, travel companies have made great strides in recent years with big data and analytics techniques. For example, one of our airline clients upgraded its frequent flyer program to incentivize elite-level frequent fliers (who account for a major share of revenues compared with normal passengers) by awarding flyer miles based on ticket cost rather than miles traveled.8 The ability to make such customer-centric decisions hinges on attaining a 360-degree view of travelers and getting to know their preferences, likes, dislikes, expectations, etc. using big data analytics.

Other examples are British Airways’ “Know Me” program, which uses big data analytics to better understand customer preferences and provide personalized services,9 and Virgin Atlantic’s customized offerings based on Apple’s iBeacon technology that informs airport passengers of discounts in the vicinity and provides automatic boarding updates.10

Quick Take

How Code Halo Thinking Transforms Travel Planning

Developing a customer-focused Code Halo for the in-flight experience is a no-brainer for airlines. A “social cabin” solution would allow travelers to share information on their entertainment, food and travel preferences. With such information, the airline could (for a modest fee) turn what can sometimes feel like a five-hour hostage siege into a highly personalized entertainment and culinary experience.

Such a solution would transform an airline’s role from being a mere carrier to an orchestrator of an integrated end-to-end experience. A “social cabin” would allow an airline to turn an often negative experience into a positive one full of connection and enjoyment.

What else could airlines investigate, beyond what goes on aboard the aircraft? Imagine an experience that extends to the whole travel process – before, during and after a trip. The airline could use a Code Halo philosophy to provide value from the moment you book a trip to the time you arrive home. It could reinvent the booking process, link more effectively to hotels, and integrate with financial institutions and others to help manage other aspects of a trip, such as securing transportation or booking events or locating resources.

Rather than focusing only on the flight, it could expand its offering to cover the entire experience of moving from point A to point B – in the most beautiful way possible.

Such advancements are aided by today’s heightened computing power, which will only grow better, faster and more ubiquitous in the near future. According to McKinsey, companies that use big data analytics effectively exhibit productivity and profitability rates that are 5% to 6% higher than those of their peers. Little doubt, then, that travel providers will adopt big data analytics at an increasingly fast pace, resulting in a more streamlined and intuitive planning experience for travelers.

**Envisioning an Intelligent Planning Engine for Tailored Trips**

With the growth in big data analytics and a customer-centric focus, it’s a natural step for travel providers to adopt the principles of Code Halo thinking. This shift will ultimately transport the travel industry to a new commercial era in which value is derived more from information than from physical assets (see sidebar, next page). At that point, the capabilities will be in place for intelligent planning engines to harness the Code Halos of individuals and organizations to automatically compile trip plans that are optimized for the traveler’s schedule, budget and destination needs and preferences, as well as reservation availability.

The Code Halos used by the planning engine would incorporate three types of information: primary, explicit and implicit (see Figure 1).

**Primary data:** Basic information that is readily accessible.

- **Places and locations:** When the information pertaining to all destinations is categorized in a standard way, with an adequate volume of guest rankings, the planning engine can systematically determine the best places and locations for the traveler.
Quick Take

The Reverse “Groupon” Model

When popular group-sharing Web sites offer deals, it is difficult to predict how many customers might be interested and, thus, how many offers the promotion will yield. But if we think through the prism of Code Halo thinking, a dynamic package can be formed by reversing the model. In the Code Halo world, we call this a business process “melt.”

For example, suppliers and travel intermediaries could collate implicit and explicit preferences of travelers to analyze how many people in the New York area are interested in a trip to Hawaii. They could then negotiate airline and hotel prices with suppliers for this group to develop a New York-to-Hawaii trip package for these selected travelers. By synchronizing the demand and availability equation, the engine could match the group with interested suppliers and build a dynamic package, customized to their needs.

The Give-to-Get Principle

A Code Halo principle that is critical to the success of an intelligent planning engine is what we call the “give-to-get” model. While most of the data needed for intelligent trip planning already exists in digital form, consumers are increasingly savvy about the worth of their personal information. They are unwilling to give it away if they don’t trust how the data will be used and protected and without the promise of something in return. In our informal employee survey, 91% of respondents said they would provide online feedback for eight out of 10 trips they took if they felt there was a reward associated with such feedback. This compares with the 82% of respondents who currently provide online feedback for just three out of 10 trips.

In many cases, the prospect of time or cost savings, targeted deals and customized experiences is enough of a lure to encourage the sharing of personal information. In this case, travelers would provide access to their Code Halos in exchange for custom recommendations based on the analysis of their data. And while travelers should not need to pay for trip recommendations (as these are what they “get” for “giving” their personal information), it may be fair to charge usage fees for actual bookings or require an upgrade to a premium account for advanced features, such as altering recommendations or planning for more than four people.

The bottom line is that giving information needs to be worth the reward value. The underlying assumption here is that the dynamic trip package is unique and not available anywhere else (see Figure 2).
• **Suppliers and availability:** The planning engine would use dynamic packaging, in which offers and packages can be analyzed in real time, based on supply data and the estimated number of guests who would be interested.

• **Schedule aggregator:** The engine would synch the schedules of the travel group and plug in the information related to holidays, vacations and time off. The system could determine the optimal time for vacation, once all the timing constraints are shared.

• **Budget and financials:** Vacation planning budgets are not always made on a purely rational or logical basis; emotional factors can also be involved. An intelligent planning engine, however, would establish spending boundaries based on funds data and credit availability.

**Explicit data:** Factual information pertaining to an individual or group that is explicitly expressed.

• **Preferences:** Most groups and individuals have a fair idea of what they don’t want; if they supply the planning engine with these preferences, it can use this information to eliminate the obvious.

• **Past expenses:** In today’s digital age, every activity has a digital track. Expenditures from previous vacation expenses, such as hotel, travel, food, amenities, etc., can offer valuable input for the planning engine to determine the budget for various activities.

**Trip Planning App**

The following depicts an optimized travel plan that an intelligent planning engine might suggest for a group traveling together, including schedule, destination, cost and comments from social networks. If the traveler agrees to the plan, he or she can click to book the trip.

![Trip Planning App](image-url)

**Figure 2**
Implicit data: Preferences and interests derived from implied information.

- **Social activity**: Social platforms generate a plethora of data expressed as likes, tweets, posts, etc. that can be analyzed to gauge an individual's inclinations and preferences. In trip planning, the biggest influencers are recent trips by friends, colleagues and relatives. The planning engine can analyze this social activity to optimize recommendations.

- **Digital tracks**: Browsing history, links clicked, ads viewed and articles read or shared form another set of data that can be leveraged by the planning engine to gain meaningful insight into a traveler's preferences and interests.

**Timeline of Transformation**

The transformation of the travel industry will at first be marked by sporadic change, but gradually, as the digital ecosystem matures, the environment will be ripe for the development and widespread use of intelligent trip planning (see Figure 3). Already, many of our hospitality clients are mining the social media data they collect to track travelers' implicit preferences, which is helping them build new systems to generate offers to individuals based on their explicit historical data.

Meanwhile, with increased digitization, travelers will quickly adopt intelligent travel planning capabilities and shun the old ways of manually compiling a travel plan. After all, by 2016, 79% of the U.S. population will own a smartphone, and by 2017, almost half of the world's population will use the Internet. Digital data available

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**Travel Planning at the Crossroads – Circa 2020**

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<thead>
<tr>
<th>Ionization</th>
<th>Spark</th>
<th>Enrichment</th>
<th>Crossroads</th>
<th>After the Crossroads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company A</td>
<td></td>
<td></td>
<td></td>
<td>Company B Winning the New Code Rush</td>
</tr>
<tr>
<td>Focused on Assets</td>
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<td>Company B</td>
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<td>Company A The Extinction Event</td>
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<td>Focused on Code Halos</td>
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**Market Capitalization**

**Time**

- **2013-14**: Emergence of social sharing, digitization of personas and ever-rising customer expectations.
- **2014-15**: New technology to store and analyze big data. Improved user data security.
- **2015-18**: New models and processes based on enhanced information and analytics.
- **2017-19**: New models reach critical mass, and industry leadership shifts.
- **2020**: Commercial acceptance of new models leads to extinction of old ways.

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*Figure 3*
for big data analytics will increase four times to 40 zetabytes by 2020,\textsuperscript{6} and if computing power continues to increase as predicted, processing those zetabytes of data will be achieved in seconds.\textsuperscript{7}

Building such a planning engine will likely be a costly undertaking, and integrating it with all required suppliers will be even more challenging. But according to industry revenue statistics, travelers might bankroll the planning engine. According to a report from the World Travel & Tourism Council, travel and tourism is one of the largest and fastest growing industries in the world. In 2012, the industry contributed $2.1 trillion in GDP and is expected to reach roughly $10.5 trillion of GDP by 2023.

Moving Forward

The travel planning industry is commoditized, with numerous players relying on lower prices and discounts to achieve customer loyalty. It’s crucial for traditional companies to divert swiftly from existing business models and prepare for the new Code Halo-based paradigm. A few players, such as Flextrip, Gogobot, Tripit and Stay.com, have already begun the transition by focusing on the social aspects of trip planning and incorporating these insights into their offerings.

The time is now for the travel industry to identify the sparks of change and begin planning for how to compete on code and distill meaning from Code Halos. Here are a few steps that travel and hospitality companies can take immediately to begin their transformation:

- **Build a strong “product/places halo:”** Form alliances to develop and maintain a standardized catalog of various places and locations in different regions and geographies. An intelligent planning engine will heavily rely on such a database of places, with authentic listings of “things to do,” along with genuine traveler ratings.

- **Build a “traveler halo:”** Develop innovative ways to assimilate the traveler information from social media networks, digital footprints and different travel entities to build a complete traveler halo. Such profiling will be of immense help to the planning engine for sorting implicit traveler preferences.

- **Build capabilities for Code Halo interfaces:** Different entities should build new interfaces through which they can collaborate. For instance, itemized details of hotel expenses should be shared with financial institutions; the exchange of such information will give the planning engine important insights for determining the budget for the next trip.

- **Build an ecosystem of sharing Code Halos:** Seemingly unrelated organizations should develop digital channels to expose information upon authorized request. For example, travel agencies cannot currently integrate travelers’ available vacation days. The sharing of individual calendars and schedules can help the planning engine optimize the best time for a group to travel.
Footnotes


2 Our Travel and Hospitality Practice conducted a focus group survey of 90 employees in October 2013.


4 Cognizant conducts an annual travelers’ survey to analyze the latest trends in travel and hospitality. Our most recent was done in Q2 2013 and included 2,600 respondents (both business and leisure travelers) from the U.S., UK, Germany, China and Australia.


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About Cognizant

Cognizant (NASDAQ: CTSH) is a leading provider of information technology, consulting, and business process outsourcing services, dedicated to helping the world’s leading companies build stronger businesses. Headquartered in Teaneck, New Jersey (U.S.), Cognizant combines a passion for client satisfaction, technology innovation, deep industry and business process expertise, and a global, collaborative workforce that embodies the future of work. With over 75 development and delivery centers worldwide and approximately 178,600 employees as of March 31, 2014, Cognizant is a member of the NASDAQ-100, the S&P 500, the Forbes Global 2000, and the Fortune 500 and is ranked among the top performing and fastest growing companies in the world. Visit us online at www.cognizant.com or follow us on Twitter: Cognizant.

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