

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

iVenture Card Travel Ltd
Petitioner

v.

Smart Destinations, Inc.
Patent Owner

Patent No. 7,765,128

DECLARATION OF ROGER BODAMER
IN SUPPORT OF PETITION FOR COVERED BUSINESS METHOD
REVIEW OF U.S. PATENT NO. 7,765,128

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I, Roger Bodamer, declare as follows:

1. I make this declaration based upon my own personal knowledge and, if called upon to testify, can and will testify competently to the matters stated herein.

2. I have been asked to provide technical assistance in connection with the petition for covered business method review of U.S. Patent No. 7,765,128 (which I will refer to as “the ’128 Patent”). This declaration is a statement of my opinions on issues related to the patentability of claims 1-24 of the ’128 Patent.

I. BACKGROUND AND QUALIFICATIONS

1. In formulating my opinions, I have relied on my knowledge, training, and experience, which I will summarize briefly. My curriculum vitae provides further detail and is attached to this declaration. (Ex. 1035).

2. I have over twenty years of experience in building technologically advanced and innovative products for leaders such as Oracle Corporation and Apple Inc. Through these years I have held a variety of executive positions including CEO, EVP, SVP and COO of various companies.

3. I earned my Bachelor’s Degree in Computer Science from the Hogeschool Enschede, Netherlands in 1990.

4. After obtaining my undergraduate degree, I worked as a software engineer at Oracle Computer as a member of Technical Staff focused on enabling

Oracle databases to interact with non-Oracle software. My team pioneered heterogeneous interoperability and distributed systems.

5. I left Oracle to lead technology and product development as the Vice President of Product Operations for OuterBay Technologies, later acquired by Hewlett Packard.

6. After OuterBay was acquired by Hewlett Packard, I became Sr. Vice President for Apple's Power School Division. My contributions focused on transitioning the software system to a modern software architecture.

7. In 2006 I became Sr. Vice President of Products and Engineering for Efficient Frontier. Efficient Frontier's software applies mathematical concepts to closed loop marketing in order to optimize advertising spend. Efficient Frontier was later acquired by Adobe Software.

8. In 2009 I became the Executive Vice President of Products and Technology for MongoDB. I lead support and marketing organizations for the non-relational database offering.

9. In August 2011 I founded Upthere, a cloud computing technology, where we build a global file system for storing a broad range of data in the cloud. The product and company publicly launched in October 2015.

10. I am a named inventor on fourteen U.S. patents, 7,437,731, 7,401,336, 7,219,351, 7,072,898, 6,236,997, 6,226,649, 6,163,858, 6,049,800, 6,041,344,

5,987,463, 9,052,824, 8,631,209, 7,219,351, & 7,437,731. These patents cover a wide range of technologies. Many of them include client/server architectures, and communications between heterogeneous databases and applications.

II. MATERIALS CONSIDERED

11. I have reviewed and considered the following documents, among others, in connection with my analysis of the '128 Patent:

- the '128 Patent (Ex. 1001);
- the prosecution history of U.S. Application No. 12/825,183, which led to the issuance of the '618 Patent (Ex. 1002);
- the prosecution history of U.S. Application No. 10/896,287 filed July 21, 2004, now Pat. No. 7,765,128 (Exs. 1003 and 1004);
- U.S. Patent No. 6,970,850 (Ex. 1020);

12. I also reviewed and relied on the following publications:

- http://www.cardwerk.com/smartcards/smartcard_history.aspx (Ex. 1005);
- <http://condor.depaul.edu/elliott/shared/projects-archive/DS420Fall99/smartcard/project/SChistory.html> (Ex. 1006);
- Smart Card Handbook, Third Edition, Wolfgang Rankl and Wolfgang Effing Copyright C 2003 John Wiley & Sons Ltd, Baffins Lane, Chichester West Sussex, PO19 1UD, England (Ex. 1007);

- Smart Card Handbook, Forth Edition (German), Wolf Rankl and Wolfgang Effing Copyright 2002, Munchen; Wien: Hanser 2002 ISBN 3-446 22036-4 (Exs. 1008-1011);
- <http://www.amazon.com/The-Data-Modeling-Handbook-Best-Practice/dp/0471052906> The Data Modeling Handbook, A *Best Practice Approach to Building Quality Data Models*, Michael Reingruber, William W. Gregory. © 1994 John Wiley & Sons, Inc. (Ex. 1012);
- <http://www.cs.tufts.edu/~nr/cs257/archive/ernst-lippe/operation-based-merging.pdf> © 1992 (Ex. 1013);
- Unix-Network Programming, Copyright 1990 Prentice-Hall, Inc. (Ex. 1014);
- Kernighan and Richie The C Programming Language 2nd Edition (Ex 1015);
- The New York Pass FAQ's (the "FAQ's").
<http://www.newyorkpass.com/body/faq.asp> From archive.org
11/21/2002. (Ex. 1016);
- The New York Pass Price List.
<http://www.newyorkpass.com/body/prices.asp> From archive.org
11/19/2002. (Ex. 1017);

- Snow.com Lift Ticket Pricing and options 2/12/2003;
<http://www.snow.com/peaks.prepurchase.asp> From Archive.org
 2/12/2003. (Ex. 1018);
 - Snow.com Lift Ticket Price List, April 03 to Close:
<http://www.snow.com/peaks.lt.bk.7.asp> From Archive.org
 2/12/2003. (Ex. 1019);
 - 1027 Lift Ticket Pricing 12/1/02 to 1/4/03 (Ex. 1031);
- Shakespeare's Globe:
<http://www.breakingtravelnews.com/news/article/btn4967> (Ex. 1022);
- SmarTrip More Than a Smart Card (Ex. 1023);
- Metro Fares and Hours (Ex. 1024);
- Smart Benefits (Ex. 1025);
- US 8,346,618 ("the '618 Patent") (Ex. 1034); and
- Webster's American Dictionary – "Aggregate" (Ex. 1036)

13. Based on discussions with counsel, I believe that exhibits 1005, 1007-1020, 1022, 1023-1025, and 1031 are prior art to the '128 Patent.

14. In addition to these, and other documents, that I reviewed in connection with this matter, my opinions are also based on my personal experience in the fields of distributed systems, client / server systems, networking, database

technologies, point of sale systems, and interoperability, as well as others.

15. I understand that, due to procedural limitations and page limits for covered business method review proceedings, the grounds for invalidity that are asserted in such a proceeding is limited and does not include all potential grounds. The fact that I address only certain grounds for invalidity and only certain prior art references in this declaration does not mean that I have rejected or formed any negative opinions regarding other grounds or references. I understand that the Petitioner reserves all rights to assert other prior art references and other arguments for invalidity, not addressed here, at a later time in any appropriate forum. If asked to do so, I will form additional opinions relating to the patentability and invalidity of the '128 Patent. I also reserve the right to supplement my opinions to address any information obtained, or positions taken, based on any new information that comes to light throughout this proceeding or otherwise.

III. LEGAL STANDARDS FOR PATENTABILITY

A. Prior Art Standards

16. My opinions are also informed by my understanding of the relevant law. I am not an attorney, but for purposes of this declaration I have been informed about certain aspects of the law as it relates to my opinions.

17. I understand that for an invention claimed in a patent to be found patentable, it must be (among other things) new and not obvious based on what

was known before the invention was made.

18. I understand that the information that is used to evaluate whether an invention was new and not obvious when made is generally referred to as “prior art.” I understand that, among other things, the “prior art” includes patents and printed publications that existed before the earliest filing date (i.e., the “effective filing date”) or the invention date (if disclosed), whichever is earliest (the “priority date”) of the patent.

19. I also understand that a patent is prior art if it was filed before the priority date of the claimed invention and that a printed publication is prior art if it was publically available before the priority date.

B. Unpatentable Subject Matter

20. I understand that patent claims may be invalid for claiming unpatentable subject matter. This includes laws of nature, natural phenomena, and abstract ideas. I understand that there is a two-step process for determining whether a patent claim is invalid for claiming unpatentable subject matter. First, one must determine whether the claims at issue are directed to one of the patent-ineligible concepts, and what the claims are trying to achieve. Second, if the claims are directed to patent-ineligible subject matter, one must consider the limitations of each claim both individually and as an ordered combination to determine whether the additional limitations transform the nature of the claim into

a patent-eligible application of a patent-ineligible concept. I understand that the second step of this analysis can be described as a search for an inventive concept – a limitation or combination of limitations that is sufficient to ensure that the patent in practice amounts to significantly more than a patent on the ineligible concept itself. I also understand that reframing a method claim as an apparatus claim does not avoid eligibility issues, when the apparatus claim is a generic computer. I understand that abstract business methods do not become automatically patentable when implemented on a computer. I have been informed that more efficiently performing claimed calculations via a computer (as opposed to hand or calculator computation) does not materially alter the patent eligibility of the claimed subject matter. Lastly, I have been informed that claims which improve the functioning of the computer itself or other technology may be patentable.

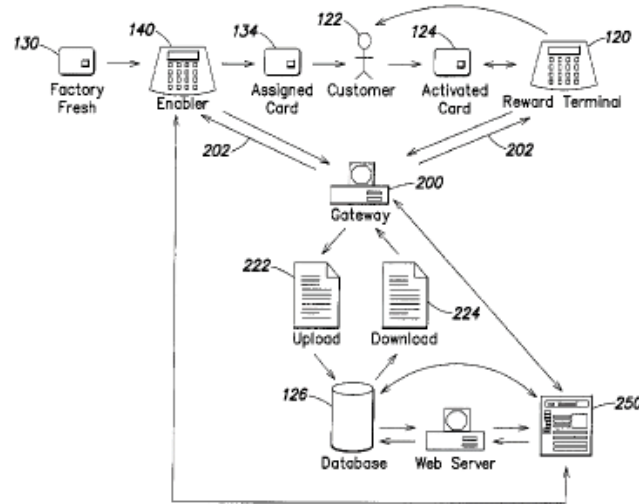
IV. THE '128 PATENT

A. Effective Filing and Priority Date of the '128 Patent

21. The '128 Patent issued from U.S. Application No. 10/896,287, filed on July 21, 2004. I have assumed a priority date of July 13, 2003 of the '128 Patent based on discussion with counsel. I understand that this date is subject to change, and I reserve the right to amend my opinion as appropriate in view of any change in the patent owner's position.

B. Overview of the '128 Patent

22. According to the '128 Patent, the “invention” is directed to “systems and methods for accessing facilities and, more particularly, for automatically and dynamically controlling access to facilities and for collecting and providing visitor



data.” '128 Patent at 1:6-9 (Ex. 1001). In particular, the patent describes a system for accessing and compensating attractions using a smart card. *See* Figure 2 from the '128 Patent, right. The system uses standard well known components of card readers, cards, smart cards, computers, and storage to construct the system.

23. As stated above, I have been asked to analyze claims 1-24 of the '128 Patent. There are three independent claims 1, 8, and 18.

1. Independent Claims 1, 8, and 18

24. Independent claims 1, 8, and 18 are directed to systems, and a method, for accessing, and compensating, an attraction. At their core each of the three independent claims has five fundamental elements.¹

a) *Receiving Data Relating to Actual Use*

25. In claims 1 and 8 a network interface and a controller, respectively,

¹ The claim elements are slightly rearranged for ease of comparison.

receive data of actual use from reward terminals over a period of time. Similarly, claim 18 receives a user code representing actual use at the reward terminal. Receipt of information relating to actual use is necessary to compute aggregated compensation.

b) Storing the Data in a Standard Database

26. Claims 1 and 8 explicitly use a database to store actual use data received from the terminals. Claim 18, a method claim, records actual use data (a user code) from a user, and later transmits it to the controller for calculation of aggregated compensation. As such, claim 18's actual use data must also be stored on the server, whether in a standard database or standard storage system. There is no technological improvement to database or storage techniques.

c) Calculating an Aggregated Compensation

27. Each of the independent claims were granted based on the addition of "aggregated compensation" . . . "wherein the controller does not compensate the attractions based on the actual use of the reward terminals at a time of the actual use of the reward terminals via a card." The addition of these two elements was used to overcome the prior art. So, this appears to be what the inventors view as a key part of their invention, thereby making them the point of novelty. '287 File Wrapper at 556-567 and 582-594 (Ex. 1004).

d) Characteristics of Reward Terminals

28. Reward terminals are further described in claims 1, 8, and 18. In

claims 8 and 18 reward terminals limit attraction access to a reward associated with the attraction by using a user code. Similarly, in claim 1 reward terminals limit attraction access by using a product code. In other words, these claim limitations link access to an attraction with the products or rewards initially purchased by the user.

29. In addition, claims 1 and 8 limit the location of the rewards terminals within the proximity of the attraction.

e) Miscellaneous Information Modeling

30. In order to calculate aggregated compensation the independent claims also include modeling and relationships of certain elements covering product codes, product lists, and attraction lists. For example, claim 1 “provide[s] at least one product definition to the reward terminals,” where the product definition includes “associations between the . . . product code and the . . . attractions.” Claim 8 includes the relationships between the attraction list, product list, and user codes. Similarly, claim 18 associates a user code with a product, the product with an attraction, and a change in product with a change in the available rewards.

31. The table below shows the independent claims side by side for ease of comparison. The claims language has been repositioned for ease of comparison.

Table 1: Independent Claims

Common Characteristic	1. A manager system that permits access to a plurality of attractions, the system comprising:	8. An access system for use with user codes comprising:	18. A computer-implemented method of managing access to at least one tourist attraction, the method comprising:
	a network interface configured to:	a controller configured to	[Computer implemented method]
1. Receiving actual use data from reward terminals regarding user access to the attractions for a time period.	receive data corresponding to actual use of reward terminals to access respective attractions of the plurality of attractions for a time period,	receive data of actual use to access a plurality of attractions from the at least one reward terminal once every predetermined time period, and	receiving the user code at a reward terminal, recording, by the reward terminal, the use of the user code to access the reward associated with the at least one tourist attraction; and
2. Characteristic of Reward Terminals	the reward terminals being located in proximity to the plurality of attractions, being configured to access the respective attractions using at least one product code, the data identifying at least one	[controller] be coupled to at least one reward terminal and configured to provide information to the at least one reward terminal,	the reward terminal being located in proximity to the at least one tourist attraction and being configured to access a reward associated with the at least one tourist attraction using the user code,

	attraction; and		
3. Calculate an aggregated compensation by a controller	<p>a controller to calculate an aggregated compensation for each attraction based on the actual use of the reward terminals to access the respective attraction by a plurality of users,</p> <p>wherein the controller does not compensate the attractions based on the actual use of the reward terminals at a time of the actual use of the reward terminals via a card.</p>	<p>calculate an aggregated compensation for each attraction based on the actual use of the reward terminals to access the respective attraction by a plurality of users,</p> <p>the at least one reward terminal being configured to access rewards using at least one user code, wherein the controller does not compensate the attractions based on the actual use of the reward terminals at a time of the actual use of the reward terminals via a card; and</p>	<p>transmitting the use of the user code to a controller for calculation of an aggregated compensation for the at least one tourist attraction based on the use of the reward terminals to access the at least one tourist attraction by a plurality of users,</p> <p>wherein the controller does not compensate the attractions based on the actual use of the reward terminals at a time of the actual use of the reward terminals via a card.</p>
4. Databases	<p>a database to store the at least one product definition;</p> <p>a database to store the data corresponding to the actual use of</p>	<p>a database, coupled to the controller, that stores the information to be provided to the at least one reward terminal and the</p>	<p>[storage of the information is implied since it is a computer implemented method]</p>

	the reward terminals to access the attractions; and	data received from the at least one reward terminal;	
5. Information Model & Business Logic	<p>[the controller] provide[s] at least one product definition to the reward terminals,</p> <p>the at least one product definition including associations between the at least one product code and the respective attractions,</p> <p>whereby a change in the associations between the at least one product code and the respective attractions changes the access to the respective attractions via the reward terminals using the at least one product code;</p>	<p>wherein the information includes an attraction list of attractions accessible from the at least one reward terminal and</p> <p>a product list of attractions that are accessible with each user code,</p> <p>whereby a change in the product list of attractions changes the rewards that are accessible with the at least one user code; and</p> <p>wherein the data includes a list of user codes and attractions,</p> <p>the user codes associated with users who access</p>	<p>associating a user code with a product, the product associated with the at least one tourist attraction;</p> <p>whereby a change in the product changes the rewards accessible via the reward terminal using the at least one user code;</p>

		rewards for the attractions via the reward terminal during the predetermined time period.	
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2. Claims Dependent on Base Claims 1, 8 and 18 Further Delineate the Calculating Aggregated Compensation

32. Claims 2 through 7 are dependent on base claim 1. Claims 9 through 17 are dependent on base claim 8, and claims 19-24 are dependent on base claim 18. The dependent claims are shown next to each, categorized by their common characteristics.

Table 2: Dependent Claims

Common Characteristic	Claims Dependent on Claim 1	Claims Dependent on Claim 8	Claims Dependent on Claim 18
Information Model & Business Logic (cont'd)	2. The manager system as claimed in claim 1, wherein the at least one product definition includes a list of the plurality of attractions.		19. The method as claimed in claim 18, wherein associating the user code with the product includes associating a user code with a product definition that comprises a list at least one tourist attraction.
Periodic Data Exchange	3. The manager system as	9. The system as claimed in claim	20. The method as claimed in claim

Common Characteristic	Claims Dependent on Claim 1	Claims Dependent on Claim 8	Claims Dependent on Claim 18
	<p>claimed in claim 1, wherein the network interface is configured to enable periodic data transfer between the database and the reward terminals.</p>	<p>8, wherein the database is configured to communicate with the at least one reward terminal with predetermined periodicity to provide the information to the reward terminal and to receive the data from the at least one reward terminal.</p> <p>10. The system as claimed in claim 9, wherein the predetermined periodicity is once a day.</p>	<p>18, further comprising periodically exchanging information between the reward terminal and a remote system.</p>
Smart Card Reading	<p>4. The product manager system as claimed in claim 1, wherein the reward terminals include smart card readers.</p>	<p>11. The access system as claimed in claim 8, wherein the user codes are encoded on programmable smart cards.</p>	<p>21. The method as claimed in claim 18, wherein receiving the user code at the reward terminal includes receiving the user code at a reward terminal comprising a smart card reader.</p>

Common Characteristic	Claims Dependent on Claim 1	Claims Dependent on Claim 8	Claims Dependent on Claim 18
Attraction constrained in time.	5. The product manager system as claimed in claim 1, wherein at least one attraction of the plurality of attractions is constrained in time.	<p>12. The access system as claimed in claim 8, wherein each attraction included in the attraction list and product list is defined by a unique attraction code.</p> <p>13. The access system as claimed in claim 12, wherein the unique attraction code includes information defining at least one access restriction for the attraction.</p> <p>15. The access system as claimed in claim 13, wherein the at least one access restriction includes a predetermined time period during which access to the attraction is valid.</p>	22. The method as claimed in claim 18, wherein associating the user code with the product includes associating a user code with a product that comprises at least one tourist attraction that is constrained in time.

Common Characteristic	Claims Dependent on Claim 1	Claims Dependent on Claim 8	Claims Dependent on Claim 18
		16. The access system as claimed in claim 15, wherein the predetermined time period begins on a first actual use by a user.	
Attraction constrained by frequency of use.	6. The product manager system as claimed in claim 1, wherein at least one attraction of the plurality of attractions is constrained in frequency of use.	14. The access system as claimed in claim 13, wherein the at least one access restriction includes a predetermined number of times that access to the attraction is valid for each user code.	23. The method as claimed in claim 18, wherein associating the user code with the product includes associating a user code with a product that comprises at least one tourist attraction that is constrained in frequency of use.
Reward terminal under attraction control.	7. The manager system as claimed in claim 1, wherein the reward terminals enable each of the respective attractions to individually control access to the attraction.	17. The system as claimed in claim 8, wherein the at least one reward terminal being further configured to enable each of the respective attractions to individually control access to the attraction	24. The method as claimed in claim 18, wherein the reward terminal being further configured to enable the at least one tourist attraction to individually control access to the respective

Common Characteristic	Claims Dependent on Claim 1	Claims Dependent on Claim 8	Claims Dependent on Claim 18
		based on the rewards.	tourist attraction.

33. The dependent claims above further detail how the claimed invention operates relating to information model and business logic, periodic data exchange, smart card usage, attraction constraints, and local control of the reward terminal.

V. LEVEL OF ORDINARY SKILL IN THE ART

34. I understand that a “person of ordinary skill in the art” (“PHOSITA”) with regard to a patent is a hypothetical person who is presumed to be aware of all pertinent prior art. I understand that the skill of the inventor is not determinative and that the following factors may be considered in determining the skill of a PHOSITA:

- type of problems encountered in the art;
- prior art solutions to those problems;
- rapidity with which innovations are made;
- sophistication of the technology; and
- educational level of active workers in the field.

35. As disclosed in the ’128 Patent the type of problems that were clearly recognized and addressed in the art include:

- architecting a client / server system (e.g. servers and terminals):
 - *See* '128 Patent at 27:61-66 (Ex. 1001) (“It should also be understood that the functionality of various of the components in the examples described above may be combined or divided in various ways, such as having a card enabled and reward terminal combined into a single unit or dividing the system management functions among multiple computers.”)
 - *See* '128 Patent at 21:42-47 (Ex. 1001) (“the system may include a gateway 200 that may communicate with the reward terminal 120 as indicated by lines 202. According to one embodiment, the gateway 200 may be a standard personal computer or mainframe computer that may be running an operating system such as Linux or Microsoft Windows™”)
- transferring data between computers, storage devices, and databases (such as servers, terminals, hard drives, and (smart) cards.
 - *See* '128 Patent at 24:45-54 (Ex. 1001) (“One example of a procedure for uploading a terminal data file from the gateway to the database is given below. However, one of skill in the art will recognize that there are many different methods for transferring data between computers and storage devices and the system is

not limited to the example given below. In addition, as discussed above, the database and the gateway may reside on the same computer base and ordinary methods known in the art may be used to access and store data in the database.”)

- *See also* ’128 Patent at 25:46-54 (Ex. 1001) (“One of ordinary skill in the art would appreciate, based on this disclosure, that there would be many methods for controlling data transfer between a computer and a database and the system is not limited to the specific example given above. In addition, as discussed above, the database may in fact be a storage device that is located at the gateway computer. In this case, methods known in the art may be used by the gateway computer to access the database and obtain information there from or write information thereto.”)
- frequent use of a (smart) card, or other card type technologies:
 - *See* ’128 Patent at 18:55-63 (Ex. 1001) (“As one of ordinary skill would appreciate based on the disclosure provided herein, any number of possible frequency constraints maybe imposed for a particular promotion and the mechanisms for storing and tracking frequency constraints using the memory of a card device may be varied. As just one example, a frequency constraint may be

depend on more than one variable, such as allowing a larger number of uses (or unlimited use) on weekdays, and lower frequency on weekends.”)

- *See* ’128 Patent at 27:51-56 (Ex. 1001) (“For example, although the system has been described primarily in terms of smart card technologies, the system may also operate with another form of user code. For example, instead of smart cards, card-visitors may be provided with a unique PIN or with a card printed with a barcode rather than having any embedded technology.”)

36. Prior Art Solutions: As discussed in detail below all elements of the ’128 Patent claims were known in the prior art at the time of invention. *See* section below on Relevant Technology Known in the Prior Art discussing both the explicitly admitted prior art in the ’128 Patent, additional prior art publications, and prior art patents. Notably, entire books and standards bodies were dedicated to implementing (smart) card based solutions in client / server environments. For example, the *Smart Card Handbook* discusses types of (smart) cards and the physical and electrical properties of (smart) cards in Chapters 2 and 3. (Ex. 1007). It discusses data transmission in (smart) card environments in Chapter 6. (Ex. 1007). It devotes Chapter 11 to the architecture of (smart) card terminals (clients) in server based environments, including the associated standards bodies and APIs.

See Figs. 12.2, 12.3, and 12.4 for example client/server architecture diagrams. (Ex. 1007).

37. Rapidity of Innovation: As with most technology, innovation is rapid relative to non-technology industries. However, client/server, database, and network communications were known for decades and therefore innovation as to the claim elements were not rapidly changing at the time of invention.

38. Sophistication of the Technology: At the time of invention, the technology in question was all well known. That is, the '128 Patent adds no technological innovation, but merely arranges known elements in known ways. As such, implementing the claimed methods and systems would require skills of a developer, not a research scientist.

39. Educational Level of Active Workers in the Field: Active developers in this field typically have an undergraduate degree in computer science, or equivalent thereof, coupled with two years of client/server design and development experience.

40. Therefore, a PHOSITA with regard to the '128 Patent would have been familiar with the design, development, and deployment of software used for controlling and tracking access to multiple facilities. This would require some level of knowledge in database software, card interfacing, and system software related to communications between computer servers and the card readers.

41. That familiarity would have come through having at least an undergraduate degree (or equivalent) in computer science or a comparable subject and at least two years of client/server design and development work experience, or an advanced degree in computer science or a comparable subject and at least one year of client/server design and development work experience.

VI. CONSTRUCTION OF TERMS USED IN THE '128 PATENT

42. I understand that in a covered business method review proceeding the claims must be given their broadest reasonable interpretation consistent with the patent specification. However, I have also been informed that claim construction is not necessarily required in considering whether claim terms constitute abstract ideas.

43. I also have been informed that in federal courts the claims are given the meaning that a term would have to a person of ordinary skill in the art at the time of the invention. I understand that the question of which standard should be applied in future Patent Trial and Appeal Board (“PTAB”) proceedings is under consideration by the Supreme Court of the United States. Under either standard, I believe the following claim terms should be construed as follows.

A. “controller”

44. “Controller” is used in independent claims 1, 8, and 18. I found no explicit definition of “controller” in the specification, however, the specification

uses “controller” eight times. It describes the controller as “a central controller that manages the system and collects data from the terminals.” ’128 Patent 4:63-64 (Ex 1001). It also states: “the central controller may be used to calculate compensation for each attraction.” *Id.* at 5:10-12. It further discloses that one preferred embodiment includes in part “an access system for use with user codes comprising a controller configured to be coupled to at least one reward terminal and configured to provide information to the reward terminal and receive data from the reward terminal once every predetermined time period, and a database, coupled to the controller, that stores the information to be provided to the reward terminal and the data received from the reward terminal.” *Id.* at 2:48-55.

45. I believe that a PHOSITA would understand these references to mean “software that manages the system, collects data from terminals, or calculates compensation.”

B. “terminal”

46. “Terminal” is used in independent claims 1, 8, and 18, and dependent claims 3, 4, 7, 9, 17, 20, 21, and 24. During prosecution of application No. 10/896,287, the parent application, in a July 9, 2008 office action the examiner stated: “[G]iven its broadest reasonable meaning, reward terminals are interpreted to mean a device capable of receiving input regarding the identity of a person eligible for a reward.” ’287 File Wrapper at 471 (Ex. 1004). In view of this

interpretation, I believe a PHOSITA would understand references to “terminal” to mean “a device capable of receiving input regarding the identity of a person.”

C. “product definition”

47. The ’128 Patent uses “product definition” in claims 1, 2, and 19. The specification states that “product definitions may be maintained as lists of promotion codes, for example, as lists of 32 bit numbers. These lists may be changed at the database 126 without changing the product codes on the cards.” ’128 Patent at 14:64-67 (Ex. 1001). It also states: “Products include collections of promotions. There may be no limit to the number of promotions that can be included in a product. According to one embodiment, each product may have a unique product code and cards may be enabled with this code.” *Id.* at 12:54-56 (Ex. 1001).

48. I believe that a PHOSITA would understand these references to mean “a list, or lists, of promotion codes.”

D. “aggregated compensation”

49. I found no explicit definition of “aggregated compensation” in the ’128 Patent specification. The specification refers to aggregate only in a single paragraph. In the context of aggregate value stored on a card, it states “a card may expire after a certain amount of use (*e.g.*, aggregated and stored on the card). One such embodiment would be to set the card to expire after \$50 of aggregated use at

attractions, where the value of aggregated use is stored on the card.” ’128 Patent at 16:23-25 (Ex. 1001). To account for this ambiguity as to meaning of “aggregated compensation” I consider a dictionary.

50. Webster’s American Dictionary, © 1997 defines “aggregate” as “formed by the conjunction or collection of particulars into a whole mass or sum; total; combined.” Webster’s Dictionary (Ex. 1031). In the context of the ’128 Patent specification, and in association with “compensation” a PHOSITA would understand this to mean “compensation calculated by the collection of multiple terminal accesses.”

VII. RELEVANT TECHNOLOGY KNOWN PRIOR TO THE ’128 PATENT

A. Disclosure of Prior Art in the ’128 patent

51. The ’128 Patent admits that the following were known in the prior art at the time of filing the application.

52. Systems for accessing multiple attractions: “Others have provided systems where tourists may purchase a pass that can be used at a variety of attractions. One example is a pass that is good for access to more than one ski area. Another is a day pass that allows access to various attractions.” ’128 Patent at 1:18-20 (Ex. 1001).

53. Smart Card Technology: “A ‘smart card’ is a card that is capable of storing data on it. Such data may be changed dynamically, such as a current

financial balance for the card; the card may also include pre-programmed data that is not changeable by the user, such as a unique identifier for the card; other data. One example of a ‘smart card’ is a plastic card the size of a credit card that has an embedded microprocessor for storing information, used for banking, medical alerts, etc.” *Id.* at 1:22-29.

54. Smart Card Reading Devices: “Such devices may be used by inserting the card into a reading device which includes a processor (or the equivalent) that may change the data on the card.” *Id.* at 1:29-31. The disclosure suggests using terminals such as the Allegro 100 terminal from Intellect, or other manufacturers such as Hypercom, Verifone, Lipman or other “smart card enabled POS terminals.” *Id.* at 13:35-39. It also discloses using the same terminals as reward terminals. *Id.* at 15:62-65.

55. “[A] buyer may provide an identification card, such as a smart card with a unique ID, at the time of purchase of a ticket, pass, reservation, or the like, which identification may be electronically transmitted to a facility site (e.g., the attraction for which the ticket or pass was purchased). The buyer [sic]ill may be confirmed at the facility site, e.g., by presenting the smart card to a smart card reader, resulting in, for example, printing of a ticket, admission document etc. to allow the buyer access to the facility site.” *Id.* at 1:39-47.

56. Computer Servers and Gateways: The ’128 Patent further admits that

the servers (or “gateways”) claimed include any number of commercially available computers. “The gateway 200 may be a standard personal computer or mainframe computer that may be running an operating system such as Linux or Microsoft Windows™. In a preferred example, the gateway may include a PowerEdge 400SC from Dell running Red Hat versions 9 Linux. However, the system is not so limited and it is to be appreciated for example that any server grade computer from any of the major manufacturers including, for example, Gateway, Dell, HP, IBM and the like, may be used in this example of the system. Likewise, any major Linux distribution may be used including SuSe, Mandrake, Debian, and others in addition to Red Hat. The gateway may form an interface between the reward terminals and the central database 126.” *Id.* at 21: 43-55.

57. Databases: The ’128 Patent also admits that a “database may be a storage element located on or attached to (e.g., an external hard-drive) the gateway computer and need not be physically separate from the gateway.” *Id.* at 21:60-62. The database may store information via SQL, *id.* at 24:41-42, or an ASCII file. *Id.* at 25:34.

58. Communication Between the Elements: It further discloses that the database and the gateway “may reside on the same computer base and ordinary methods known in the art may be used to access and store data in the database.” *Id.* at 24:51-54. Further that, “One of ordinary skill in the art would appreciate, based

on this disclosure, that there would be many methods for controlling data transfer between a computer and a database and the system is not limited to the specific example given above. In addition, as discussed above, the database may in fact be a storage device that is located at the gateway computer. In this case, methods known in the art may be used by the gateway computer to access the database and obtain information there from or write information thereto.” *Id.* at 25:51-54.

59. Controller: As discussed above, “controller” is a fairly generic term for the software module(s) that operate the system, at least in part. Software that controls hardware, transfers data, and computes compensation was well known in the prior art as of the assumed priority date of the ’128 Patent.

B. Background of Card Based Commerce - Prior Art

60. Entire books have been written on (smart) cards used in commerce. *See Smart Card Handbook* (Ex. 1007). It details cards, smart cards, terminals, smart cards in payment systems, and related system architectures. Notably, there are numerous standards committees to ensure that commerce flows freely between the consumer, the attraction, the marketeer, and the banks (if necessary). Smart cards were conceptualized in the mid 1970’s and began taking root in Western Europe in the early 1980’s. Prepaid phone cards were one of the first smart cards finding wide spread acceptance. *See Smart Cards-History* (Ex. 1005); *see also Smart Card Handbook Chapter 11.4 Connecting Terminals to Higher Level*

Systems, and Chapter 12 *Smart Cards in Payment Systems* for details.

61. The System Architecture Was Well Known: Card payment systems can be centralized or decentralized or a combination of the two. See Figure 12.2 below, from *The Smart Card Handbook* (Ex. 1007), describing the basic centralized architecture. In a centralized architecture the terminals and processing systems are connected at all possible times.

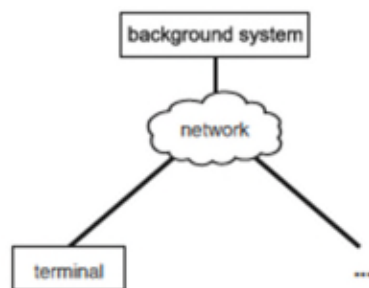


Figure 12.2 The basic architecture of a centralized system for electronic payments. All of the illustrated connections are permanent

62. In a decentralized system the terminal is allowed to work offline and establishes connections to the computing systems when necessary. See Fig. 12.3 below from Chapter 12 of the the *Smart Card Handbook* (Ex. 1007).

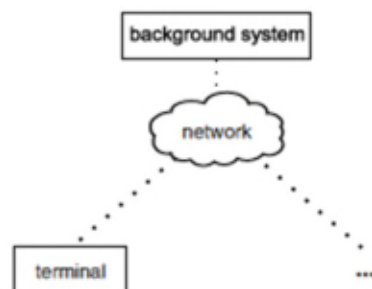


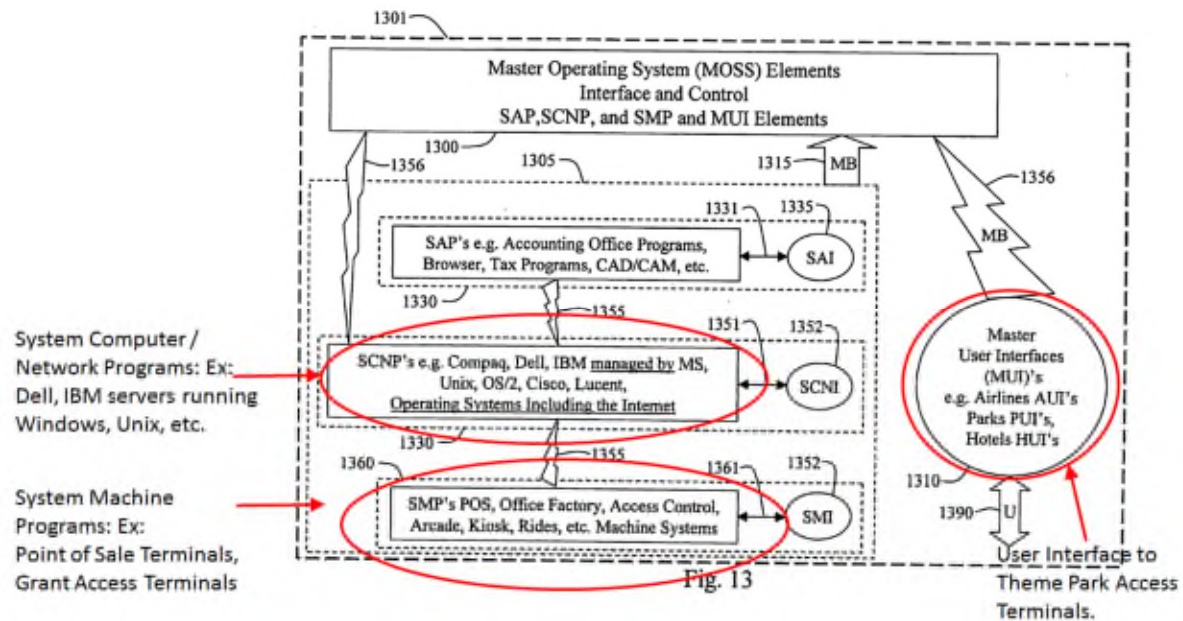
Figure 12.3 The basic architecture of a decentralized system for electronic payments. All of the illustrated connections can be established as needed

63. As noted in the *Smart Card HandBook*, “mixed solutions that are neither fully centralized nor fully decentralized are often used, in order to combine

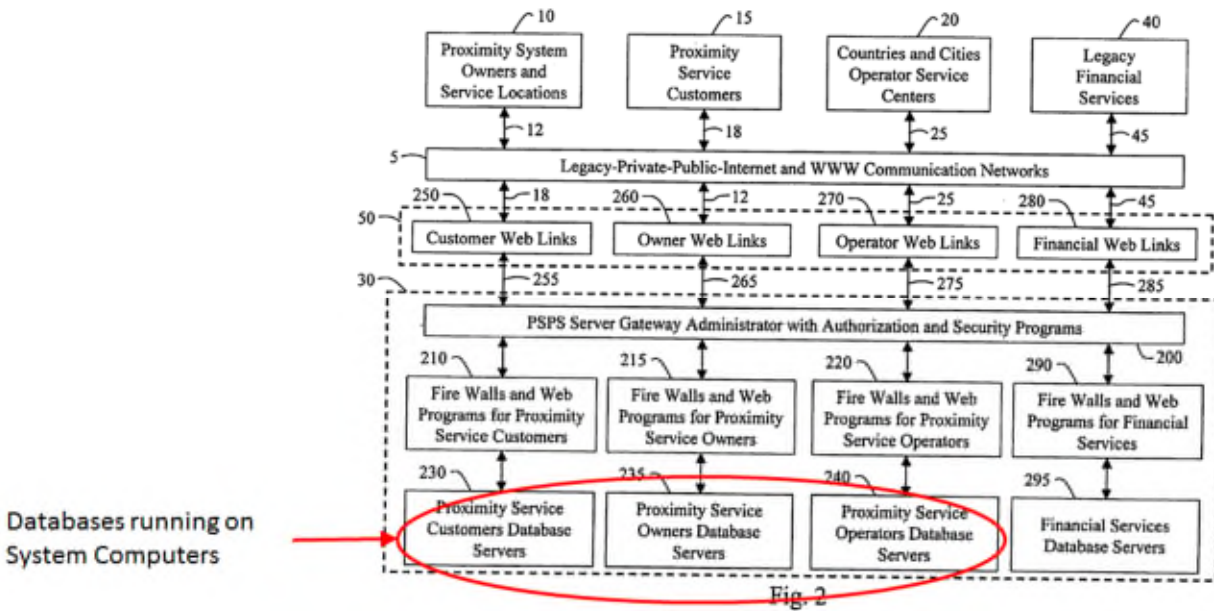
the advantages of the two architectures while avoiding their disadvantages.” *Id.* at 713 (pg. 678) (Ex. 1007). The reference even discloses that many “systems require each terminal to establish an online connection . . . at least once a day.” *Id.* This is the approach that the ’128 Patent uses. The ’128 Patent calculates aggregate compensation by allowing “periodic data transfers between the database and the reward terminals.” (Claim 3) The systems “periodically exchanging information between the reward terminal and a remote system” . . . “wherein the database is configured to communicate with the at least one reward terminal with predetermined periodicity . . . wherein the predetermined periodicity is once a day.” (Claims 9 & 10).

64. Similarly, U.S. 6,970,850 (“the ’850 Patent”) (Ex. 1020) discloses a client/server architecture consisting of terminal clients communicating with known servers, and databases. Specifically, Figure 13 of the ’850 Patent, shown below, discloses client side terminals at 1360. The ’850 Patent refers to client terminals as system machine programs (“SMP”). It discusses many types of client terminals, including Point of Sale (“POS”) terminals, Access Control terminals, Arcade based terminals, kiosks, and amusement attractions. Servers are also disclosed and are referred to as system computer/network programs. It specifically names servers manufactured by Compaq, Dell, and IBM running commercially available operating systems such as Microsoft Window, Unix and OS/2 at 1330. Figure 13

also discloses network communication devices such as those manufactured by Cisco and Lucent. *See also* 1330. Also shown highlighted by a circle, on the right hand side of Fig. 13, is an interface to access terminals residing at multiple theme parks. *See* 1310.



65. Figure 2 of the '850 Patent shows a slightly different view of the same client/server architecture, which references a variety of databases. For example, it discloses databases that store customer, owner, and operator information. Figure 2 also discloses interfacing these databases to proximity based terminals, located remotely from the servers.



66. Therefore, a PHOSITA would have read and understood that the client/server architecture disclosed in the '128 Patent is essentially the same as the architecture previously disclosed in the *Smart Card Handbook* and the '850 Patent. A PHOSITA would also have understood that these systems were commercially available, widely deployed, and that the '850 Patent offered no new technological innovation in the area of client/server computing.

67. Types of Cards: There are many types of cards used in commerce, including credit cards, debit cards, and prepaid cards. The cards of the '128 Patent include prepaid cards, both dumb and smart, and are sometimes referred to as “electronic purses” to distinguish them from credit and debit cards. The cards of the '128 Patent are not credit cards or debit cards. Rather, they are use cards which are prepaid with credits to enter certain attractions. Compensation to the attractions

is *not* done at the time of access, but rather is done later after calculating an aggregate usage. This is one example of an “electronic purse.” *See Smart Card Handbook* at 720 (pg. 685) (Ex. 1007).

68. “The idea of implementing an electronic purse in a smart card goes back to the early days of smart card technology. However, only since the 1990s has this concept been realized, since that was when the development of large systems first began.” *Id.* at 720 (pg. 685) (Ex. 1007). In 1990 the European Commission decided to create a European standard for electronic purse systems, EN 1546. Systems based on EN 1546 were implemented throughout Europe, including the Netherlands and Austria. *See id.*

69. Terminals: Below is Figure 11.1 from the *Smart Card Handbook*. It describes the typical operations of a card terminal. Consistent with the disclosure of the ’128 Patent the book describes a terminals key function as supplying power to the card, reading the card, and establishing a data link to the computing systems. *Id.* at 690 (pg. 655) (Ex. 1007). The terminals can be portable or stationary. The EMV specification, discussed above, explicitly includes the concept for downloadable program code. *Id.* at 690 (pg. 655) (Ex. 1007). There are multiple classes of terminals, categorized by whether it includes interface modules such as USB, keypads, a personal computer, a display or a security module. *Id.* The figure below shows the most sophisticated class of terminal.

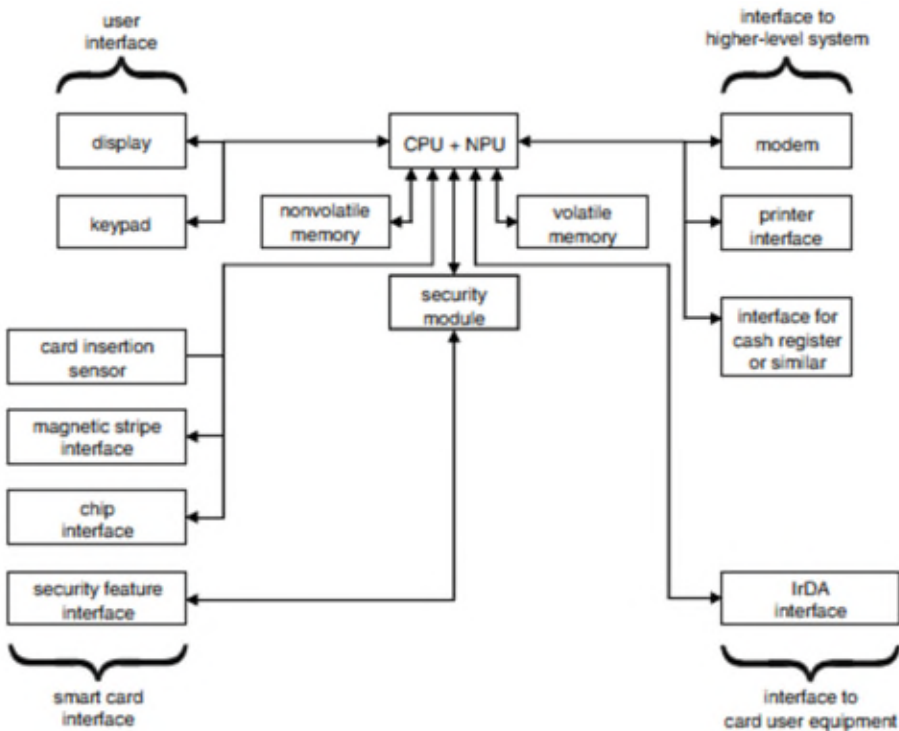


Figure 11.1 Typical architecture of a smart card terminal with a display, keypad, magnetic-stripe reader and security module. Such terminals are often used at point-of-sale locations to allow payments to be made using a wide variety of cards (credit cards, debit cards and electronic purses). A keypad that is specially protected against manipulation (a PIN pad) can be used if necessary. This diagram shows the basic energy and data flows and is not a schematic diagram

70. Web Server: Modern web server technology was initially invented in the mid 1990's and soon after emerged into the commercial market, Netscape being one of the first companies to exploit the commercial opportunity. Currently, and at the time of filing the '128 Patent, web servers, and associated applications and web browsers, were prolific.

71. Given the explosion of standards and commercially available (smart) card technology, applications of the technology expanded to include VIP cards, frequency of use cards, discount cards, and loyalty cards across a wide range of industries such as automobile dealers, telecommunications, car washes, cleaners,

ski resorts, golf courses, hotels, restaurants, and night clubs.

72. The Information Model: The '128 Patent discloses, and to a lesser degree, claims a simple data model, that is necessary for almost all applications. The '128 Patent associates at least the following data elements: an attraction list, a promotion list, reward terminals, a product list, a user code, and a time period. The user code is a unique identifier of the card user. Typically, a record in the database is keyed off this unique identifier. The database record then associates the attraction list, promotion list, product list, and certain reward terminals with the unique identifier. This is sometimes referred to as a one-to-many relationship. An outline for the data model is shown in Fig. 8 of the '128 Patent. This relationship is tracked and is used to calculate and optimize compensation to the attractions. Writing an application such as this, on the well know smart card infrastructure and computing devices, is a conventional usage. *See The Data Modeling Handbook, A Best-Practice Approach to Building Quality Data Models* pp. 88-94, 174-209, 306-309, and Section 9.7 (Ex. 1012).

C. All of the Claims Use Prior Art Technology in Conventional and Non-Novel Ways

73. Each of the steps the method claim and each of the elements of each of the system claims are present in the prior art. *See Appendix A* for an element by element claim chart.

1. Receiving Data Relating to Actual Use

74. Claims 1 and 8: Servers receiving information of actual use of a terminal in order to grant access to a location, event, or attraction is well known in the prior art.

Claim 1	Claim 8	Claim 18
receive data corresponding to actual use of reward terminals to access respective attractions of the plurality of attractions for a time period,	receive data of actual use to access a plurality of attractions from the at least one reward terminal once every predetermined time period, and	receiving the user code at a reward terminal, recording, by the reward terminal, the use of the user code to access the reward associated with the at least one tourist attraction; and

75. As discussed above, client/server systems were well known in the prior art and discussed extensively in the *Smart Card Handbook* and the '850 Patent. *See* discussion *supra*. Specifically, the '850 Patent describes servers receiving access information from proximity owners/operators, using terminal based access devices, for compensation calculations:

The cyber card codes entered into the proximity service systems 3 can be batched in the proximity service systems 3 and then periodically transferred to the PSPS web-site 30 and entered into the owners [sic] location database 400. The information associated with the legacy codes, i.e.

transaction data in which the PSPS web-site 30 does not guarantee payment, is preferably transmitted to PSPS web-site 30 in real time and entered into the owners [sic] location database 400 in real time.

'850 Patent at 16:8-18 (Ex. 1020).

76. As discussed *supra*, the claimed systems and methods utilize a client server architecture that passes data between the client terminals and server controllers.

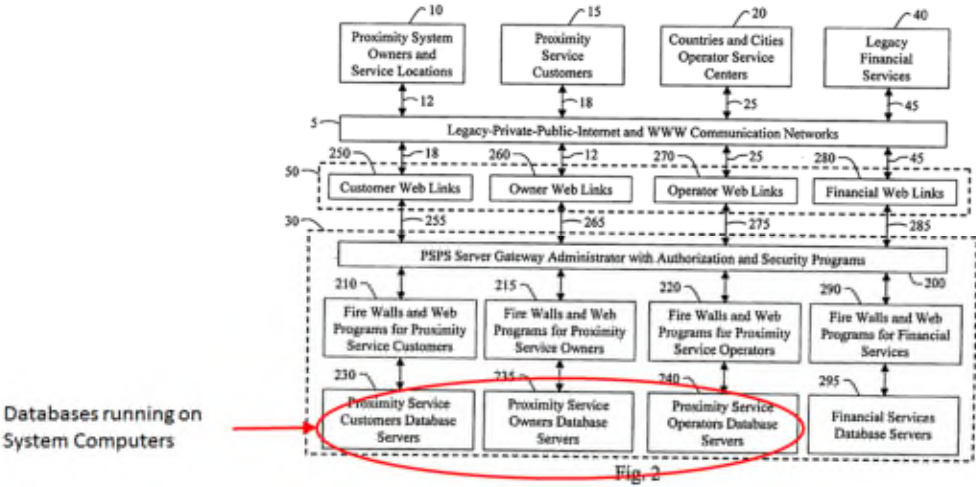
77. Claim 18: Terminals were well known in the prior art, and were designed to receive codes that can be associated with one or more attractions. *See the Smart Card Handbook*, Chapter 11 (Ex. 1007). Associating a code with individual users for access to services was known in the art and would be a conventional use of conventional software developers.

The special cyber card code can be utilized in conjunction with the customer access cyber card code to authorize services locally at the service location (or proximity service system) without [sic] having to get remote authorization each time a service or product is delivered

'850 Patent at 6:45-50 (Ex. 1020).

2. Storing Data in a Standard Database

Claim 1	Claim 18
a database to store the at least one product definition; a database to store the data corresponding to the actual use of the reward terminals to access the attractions; and	a database, coupled to the controller, that stores the information to be provided to the at least one reward terminal and the data received from the at least one reward terminal;



78. Databases storing information sent from proximity service owners/operators was known in the prior art and discussed in the '850 Patent. Above is Fig. 2 showing databases running on servers storing information from the proximity service providers, as well as users and financial service providers.

79. Further, the '128 Patent acknowledges the existence of many types of databases in the prior art, and does not improve upon them.

- “‘Database’ as used herein includes any data structure to store data and a ‘database’ may be a collection of separate databases or a subset of data in a larger database.” ’128 Patent at 11:38-40.
- Databases include well known SQL or ASCII files:
 - “The gateway may write the received records in an ASCII file.” *Id.* at 23:33-34;
 - The upload program may “store[s] the information in the database via SQL.” *Id.* at 24:41-42.

80. The Smart Card Handbook also discloses that a “subset of the database query language SQL (structured query language) has been standardized for use with smart cards in ISO/IEC 7816-7. The *Smart Card Handbook* at 518 (pg. 483) (Ex. 1007). It discusses dozens of detailed database implementations. *See* section 7.13 for details on SCQL (“Smart Card Query Language”).

3. Calculating Aggregated Compensation Based on Actual Use

81. Independent claims 1, 8, and 18 focus on calculating “aggregate compensation” based on use of terminals “wherein the controller does not compensate the attractions based on the actual use of the reward terminals at a time of the actual use of the reward terminals via a card.”

a) Aggregated Compensation

82. U.S. 6,970,850 *Proximity Service Provider System* (“PSPS”) discloses centralized systems and methods for managing proximity services and includes ticket marketing, access authorization, fee collection, and aggregated compensation distribution to the proximity services or their operators. Proximity service systems include Point of Sale (“POS”) stations, ATM machines, toll gates, gas pumps, kiosks, pay phones, vending machines and parking meters “to name a few.” ’850 Patent at 1:33-36 (Ex. 1020) The specification also discloses systems such as “toll tags, gate and garage access” *Id.* at 2:30-31. Claim 10 specifically lists “access services” as a proximity service.

83. The ’128 Patent coordinates three entities, the tourist, the attraction, and the system manager. Analogously, the ’850 Patent coordinates three entities, the customer (tourist), the proximity service (attraction), and the PSPS (system manager). The flow of money between the three entities is also the same. Money flows from the Tourist, to the System Manager, and then to the Attraction. Analogously, in at least one embodiment of the ’850 Patent, money flows from the customer, to the PSPS, and then to the proximity service. The proximity service, or its operator, can be paid at the time of customer use, or at a later time after the uses are aggregated. Payment may be completed by either “legacy cards” (*i.e.* credit cards) or cyber cards, for aggregated amounts:

The . . . cyber card . . . is for receiving one of the approved services when at a specific location and these cyber card[s] . . . may be renewed by each customer at predetermined times. This feature allows the PSPS *service payments to be guaranteed to the owner of the proximity service system providing the services to the consumer without having to have remote authorization services each time the customer wants a relatively inexpensive service*, such as the dispensing of soda pop or ice cream at an amusement park, for example. Also the feature is considered much less bothersome than refilling a smart card with money, for example, each time the card runs out of money. In addition, [sic] limits can be put on a customer's account, either by the customer or the PSPS web-site operator, and the cyber card becomes invalid when received services of all types exceed these predetermined amounts.

'850 Patent at 5:54-6:2 (Ex. 1020) (emphasis added).

84. Therefore, the PSPS system compensates the proximity owner/operators at a time after initial use of the proximity service by the customer, and sends an aggregated payment after multiple uses. The specification clarifies that the aggregated compensation may be paid on a periodic basis, like daily or weekly:

PSPS cyber card delivered transaction data might be delivered several times a day or weekly from the proximity service systems to the PSPS web-site, depending on the collection method used by the proximity service owner and desirably lists the customer cyber card code along with the amount charged for each service at each location along with the time the service was delivered.

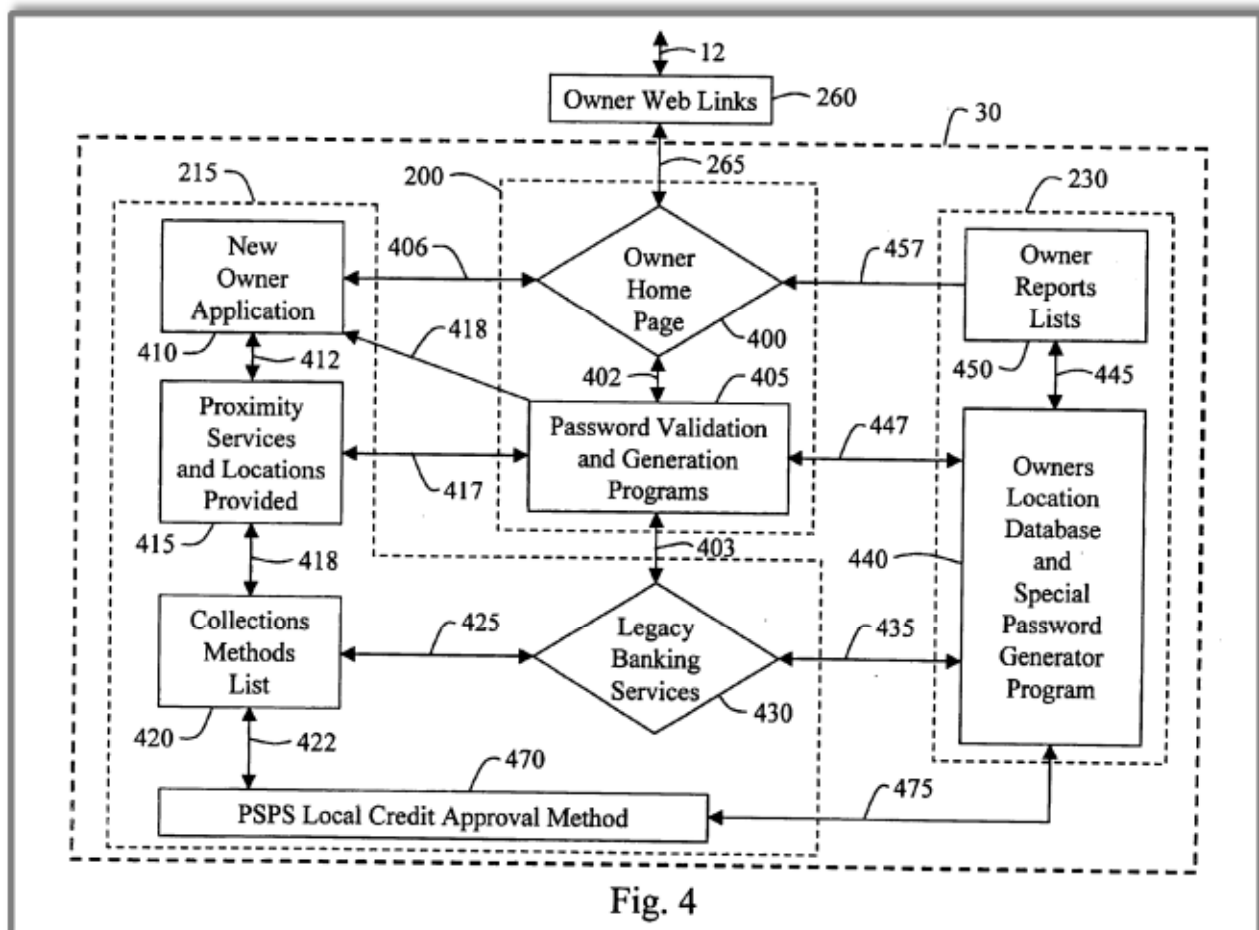
Id. at 6:27-33 (Ex. 1020).

The above description is in regards to how the special local 15 authorization credit approval 370 may work in terms of using the special cyber card code by the customer 15 for a service and the owner 10 *eventually gets paid* and the web-site owner 30 collects from the customer 15 and provides the customer **15** a report listing all the charges, locations and service dates for example.

. . .

When the customer 15 is approved locally . . . or any other means agreed to between the respective owners 10 and PSPS web-site 30 owners that guarantee the payment, the amount of the transaction is computed (for example if the service is for parking the amount may be \$3.00 an hour).

Id. at 15:46-60 (Ex. 1020).



85. Fig. 4 of the '850 Patent above shows the proximity owners viewpoint into the PSPS system. As one can see the system includes: (1) links to legacy banking systems (430); (2) owner reports lists (450); (3) PSPS local credit approval method; (4) proximity services and locations provided; and (5) collection methods lists. Each of these computing services supports access to the proximity

service and related compensation for its owner or operator. The specification explains: “At the PSPS web-site 30 owners (FIG. 4) or operators (FIG. 5) home sites, the credit and/or cyber card codes for each transaction is again deciphered and validated, sorted and sent to the customer private data base 340 for collection from the customer 15 who provided the cyber card code or credit card number to the proximity service system 3 and thereby received the service therefrom. The specified credit account and money is then deposited to the owners bank account as described in more detail in connection with FIG. 4.” ’850 Patent at 13:67-14:9 (Ex. 1020). This explanation, in light of the aforementioned ’850 Patent references discussing delayed guaranteed payments for inexpensive services, further establishes that compensation, after the initial use, can be done in an aggregated fashion after the customer’s use is accounted for through cyber card codes or other methods.

b) Actual Use

86. I did not find an explicit definition of *actual use* in the specification or claims of the ’128 Patent, however a variety of examples are given. The claims restrict access, and thereby actual use, by time or frequency. For example, the attraction may be:

- “constrained in time” (Claims 5 & 22);
- restricted to “predetermined time period” (Claim 15) during which

access to the attraction is valid, which may begin on a first “actual use by a user” (Claim 16);

- “constrained in frequency of use” (Claim 6 & 23); and
- restrained to a “predetermined number of times” an attraction is validly accessed (Claim 14).

87. After review of the prior art I conclude that each of these methods of calculating compensation were known in the prior art.²

88. Time constraints have been used in the prior art to compute compensation. The *New York City Pass* system calculates the predetermined time period from the first activation to expiration. *See FAQ's* (Ex. 1016). The *New York City Pass* also tracks time using at least 24 hour periods. *See id.* For example, if a 24 hour pass was first used at 8:00 p.m. on a Wednesday it would expire at 8:00 p.m. on Thursday.

89. In addition, ski resorts set pricing depending on time of use (date) and number of days. The rates decrease as the number of days increases. *See Snow.com Lift Ticket Pricing* (Ex. 1015). It is also well know that live theatre and movie theatres have used matinee pricing for decades.

90. Further, the Washington D.C. Metro launched “SmarTrip” prior to invention of the patent in suit. A SmarTrip card enabled access throughout the

² The '618 Patent describes use as *number of uses*, *time of use*, and *level of use*. These terms largely recast and overlap the uses described in the '128 Patent.

Metrorail. Value (e.g. money credit) is added onto the SmarTrip Card by either its user, or the user's employer. A user is granted access to the metro "by touch[ing] the SmarTrip card to the circular target panels on top of or inside the Metrorail station fare gates." *See SmarTrip More than a Smart Card* (Ex. 1019). Fares are then computed by the level of use or time of use. During commute times regular fares are charged, and reduced fares are charged at all other times. More specifically, regular fares are charged 5:30 a.m. to 9:30 a.m. and 3:00 p.m. to 7:00 p.m. *See Metro Fares and Hours* (Ex. 1020). Therefore, SmarTrip constrains pricing and compensation by the time of use. Further, use of the Washington D.C. Metro is constrained by hours of operation. *See Metro Fares and Hours* (Ex. 1020), constraining use between the hours of 5:30 a.m. and midnight on non-holiday weekdays.

***c) "Constrained by Frequency of Use" and
"Predetermined Number of Times"***

91. Claims 6 and 23 constrain by frequency of use, and claims 14 is restrained to a "predetermined number of times." The prior art has widely restricted access to by the number of time a customer can access the attraction. For example, the New York City Pass discloses that only a single access per attraction is possible per day. *See FAQ's* (Ex. 1016). Further, multi-day ski passes limit access by the number of uses. *See Lift ticket options 2/12/2003* (Ex. 1014).

92. It is also well known that movie theatres allow access, and are

compensated on the premise of one ticket per person per movie screening.

4. Characteristics of Reward Terminals

Claim 1	Claim 8	Claim 18
the reward terminals being located in proximity to the plurality of attractions, being configured to access the respective attractions using at least one product code, the data identifying at least one attraction; and	[controller] be coupled to at least one reward terminal and configured to provide information to the at least one reward terminal, ... the at least one reward terminal being configured to access rewards using at least one user code,	the reward terminal being located in proximity to the at least one tourist attraction and being configured to access a reward associated with the at least one tourist attraction using the user code,

93. Locating reward terminals in the proximity of attractions was well known in the prior art. For example, *see* Smart Trip More Than a Smart Card (Ex. 1019) showing a terminal for purchasing a smart card at the metro station.

94. Specific products and discounts based on the identity of the user was also well known in the prior art. “Senior citizens and people with disabilities . . . may buy specially encoded \$3 and \$10 farecards, or SmarTrip cards, that deduct one-half the regular fare for each trip not to exceed \$1.60.” Metros Fares and Hours (Ex. 1020).

5. Miscellaneous Information Modeling

Claim 1	Claim 8	Claim 18
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<p>[the controller] provide[s] at least one product definition to the reward terminals,</p> <p>the at least one product definition including associations between the at least one product code and the respective attractions,</p> <p>whereby a change in the associations between the at least one product code and the respective attractions changes the access to the respective attractions via the reward terminals using the at least one product code;</p>	<p>wherein the information includes an attraction list of attractions accessible from the at least one reward terminal and</p> <p>a product list of attractions that are accessible with each user code,</p> <p>whereby a change in the product list of attractions changes the rewards that are accessible with the at least one user code; and</p> <p>wherein the data includes a list of user codes and attractions,</p> <p>the user codes associated with users who access rewards for the attractions via the reward terminal during the predetermined time period.</p>	<p>associating a user code with a product,</p> <p>the product associated with the at least one tourist attraction;</p> <p>whereby a change in the product changes the rewards accessible via the reward terminal using the at least one user code;</p>
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95. Modeling and associating data elements was well known in the prior art. *See The Data Modeling Handbook* Chapter 5 and pp 88-94. (Ex. 1008).

96. Therefore, it is my opinion that none of the claimed components of the '128 Patent claims constitute a "technological feature" under 37 C.F.R. § 42.301(b) because the claims cover no new, non-obvious technology and the specification makes clear that known, prior art technology can be used to perform the functions of the alleged invention.

D. The Claims Do Not Solve a Technical Problem with a Technical Solution

97. I have reviewed the '128 Patent and its file wrapper. (Exs. 1001, 1003, and 1004). I am of the opinion that the '128 Patent addresses a business problem with known technology used in a conventional fashion.

98. The '128 Patent specification confirms that the technologies underlying the patent claims were well known before the assumed priority date. These technologies were reviewed above at in the section entitled *Relevant Technology Known Prior to the '128 Patent*, and are briefly summarized again here for context.

99. The '128 Patent admits that the following were known in the prior art: systems for accessing multiple attractions, smart card technology, smart card reading devices, computer servers and gateways, databases, controllers, and communication between the above elements. See ¶¶ 51-59 above for more details.

100. In addition, card-based commerce systems were well established in the prior art. Most notably, *The Smart Card Handbook* discloses numerous standards committees who have addressed this technology and how they are designed for use in conventional applications, such as that claimed in the '128 Patent. It also discusses the centralized and decentralized client/server architectures. Similarly, the '850 Patent discloses a client/server architecture applied to systems for compensating proximity service operators. Both references

discuss the infrastructure necessary to implement the system disclosed and claimed in the '128 Patent, including web servers, gateway servers, terminals and networking. *See* ¶¶ 60-72 above for more details.

101. Lastly, the compensation methods, and operational processes, are described in various prior art references. *See* ¶¶ 81-94 above for more details.

102. File Wrapper: The applicant's statements during prosecution confirm that any purported advances over the prior art were based on non-technical concerns about supposedly improved business processes for computing compensation. In response to an obviousness rejection by the examiner the applicant filed an amendment limiting the claims to calculating an "aggregated compensation." '287 File Wrapper at 556-567 (Ex. 1004). After another obviousness rejection by the examiner the applicant further limited all the independent claims with the negative limitation: "wherein the controller does not compensate the attractions based on the actual use of the reward terminals at a time of the actual use of the reward terminals via a card." *Id.* at 582-594 (Ex. 1004).

103. Therefore, the claims were distinguished over the prior art solely upon calculating aggregated compensation "wherein the controller does not compensate the attractions based on the actual use of the reward terminals at a time of the actual use of the reward terminals via a card."

104. Developing software to perform these calculations on the

aforementioned general computing technology would have been routine for a PHOSITA. As discussed above, the prior art discloses numerous examples of usage based compensation. These applications solve no technical problem and implement no novel technical solution. These claim elements are solely financial.

105. The claims: The resulting claims of the '128 Patent perform standard functions associated with software on general purpose computing devices.

106. As discussed above a PHOSITA would recognize that independent claims 1, 8, and 18 cover essentially five elements (whether characterized as a system or a method):

- (1) receiving data relating to actual use from a terminal;
- (2) storing data in a standard database;
- (3) calculating an aggregate compensation;
- (4) locating terminals proximate to the attraction, configured to access the attraction, associated with a product code, user code or reward; and
- (5) modeling the relationships among attributes.

107. Therefore, at best, the '128 Patent addresses a business problem with known technical solutions.

VIII. THE CLAIMS ARE DRAWN TO AN ABSTRACT IDEA

108. In my opinion, all claims of the '128 Patent are drawn to the abstract idea of calculating aggregated compensation for attractions based on actual usage.

Calculating aggregated compensation for attractions based on actual usage are what the claims are trying to achieve. The file wrapper indicates that that the applicants believed the novel portion of their invention was a system or method for calculating aggregated compensation based on actual usage. When the claims are stripped of their coloring this is the goal of the claims. Other elements in the claims are a means to this end.

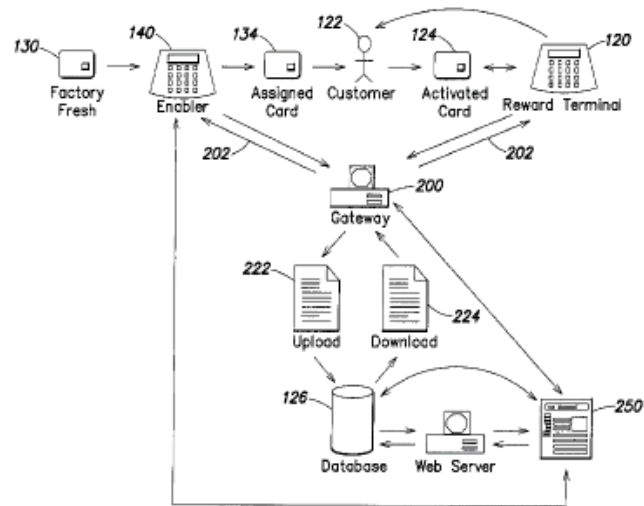
109. More specifically, the '128 Patent claims focus on computing an aggregated compensation for attractions based on actual use (purchases) over some period of time, but not at the actual time of use (purchase). This amounts to no more than volume based discounting which has existed for centuries as a commerce mechanism. Further, this amounts to nothing more than a conventional application on a conventional computing infrastructure.

A. The Claims Merely Recite Conventional Components Used in Conventional Ways

110. The claims lack any form of an inventive concept because they merely employ conventional and generic components, such as a server (personal computer, mainframe computer), smart cards, smart card readers, databases, and network connections. These technologies have been known for decades. Further each has been explicitly disclosed as such in the specification of the '128 Patent (Ex. 1001).

B. The Claim Elements, When Considered Individually, Merely Recite Conventional Components Used in Conventional Ways.

111. One of skill in the art reading the '128 Patent would understand that it merely teaches using generic computers, and computer components, to perform generic functions. Namely, using known computing technologies to track access and usage of attractions as a method for computing aggregated compensation. *See* Figure 2, right, from the '128 Patent.



112. Specifically, one of skill in the art reviewing the '128 Patent schematics would find them to reference a generic smart card (130, 134, 124), a standard computer (gateway) (200), a database (126), and a web server. Even the upload (222) and download (224) code which enables communication between the card reader, gateway, and database was well known, conventional, and routinely developed. Therefore, in my opinion, one of skill in the art would not find any specialized computer or other specialized equipment for carrying out the claimed elements in the '128 Patent.

113. One of skill in the art would also recognize that the claims track the specification and likewise fail to recite any special purpose computer. The claimed “terminal” cannot be viewed as a special purpose computer as the '128 Patent

explicitly admits that these terminals were commercially available in the prior art and could be used as elements to the claimed methods and systems.

114. Further, as discussed above, the '128 Patent discloses that each of these elements was available in the prior art. The '128 Patent does not make any improvements to these or to any of the other recited conventional components and features. As such, one of skill in the art would understand the mere recitation of these components does not, by itself, introduce a technological feature or impose any meaningful limit on claim scope. Accordingly, in my opinion, none of the network, computer components, or software recited in the claims offer a meaningful limitation beyond generally linking known compensation methods to known computing equipment.

115. It is my opinion that calculating aggregated compensation could have easily been achieved by hand using paper and pencil or a hand held calculator. It is my understanding that more efficient processing of these calculations on generic computers is insufficient to limit the abstract idea to turn it into a patentable invention.

116. Attached as Appendix A, I have included claim charts delineating how each element was known in the prior art and/or used in conventional ways.

C. The Claims Elements, When Considered as An Ordered Combination, Merely Recite Conventional Activity

117. The claim elements when considered as an ordered combination

merely recite conventional activity, well known at both the technological and business level.

As discussed above, a PHOSITA, would understand that the independent claims essentially have five elements (whether system or method).

- (1) receiving data relating to actual use from a terminal;
- (2) storing data in a standard database;
- (3) calculating an aggregate compensation;
- (4) locating terminals proximate to the attraction, configured to access the attraction, associated with a product code, user code or reward; and
- (5) modeling the relationships among attributes.

118. At the technology level, the claims utilize, and the disclosure explicitly describes, a client/server architecture, well known to a PHOSITA. Here, the client is a terminal with a card reader that validates access to the attraction, and a server and/or gateway communicating with the card reader that calculates compensation. The claims add no technological improvement to the computing devices and utilize the computing devices in known and conventional ways. The claims utilize the known software and computing technologies to calculate compensation, not improve the functioning of the computing devices or network communications.

119. The purpose of the claims is to calculate aggregated compensation

based on actual usage of the attractions, whether by frequency of use or time of use. These mechanisms have been well known as a way of calculating compensation, as detailed above. The '128 Patent claims combine these conventional ways of calculating compensation with a conventional client/server computing architecture. My understanding is that placing known applications on known computer technology is an insufficient limitation to make the claims patent eligible.

120. One of skill in the art would not find anything else in the claims that adds a meaningful limitation to the underlying abstract idea of calculating aggregated compensation for attractions based on actual usage. The claim elements—whether considered individually or in combination—merely utilize the above-described conventional components in conventional ways.

D. The Claims Do Not Meaningfully Restrict the Abstract Idea Thereby Foreclosing Future Innovation

121. The claims of the '128 Patent add no meaningful limitation on calculating aggregated compensation. The claims are extremely broad allowing compensation to be calculated on actual usage, whether for predetermined time periods or frequency of use. All other limitations merely recite conventional components used in conventional ways or include elements necessary to compute the aggregated compensation. For example, neither “receiving data . . . of actual use” (Claims 1 & 8) nor storing information in a database (Claims 1 & 8) limits the

way aggregated compensation is calculated.

122. I understand that in considering an abstract idea analysis courts may ask “how much future innovation is foreclosed relative to the contribution of the inventor.” Here, as noted above, the patent applicant admitted in the prosecution history that any purported innovation in the claims lies in the calculation of aggregated compensation. As discussed above, the claims merely recite conventional components used in conventional ways. Therefore, even if the actual usage based claim elements were not known in the prior art, which they are, the amount of innovation contributed by the inventors is extremely low. Contrarily, the amount of future innovation that would be foreclosed would be significant, namely many applications relating to usage based compensation. Therefore, it is my opinion that this balancing weighs heavily in favor of invalidating this patent.

IX. ATTESTATION OF TRANSLATION

123. I am fluent in both German and English. I reviewed references to *The Smart Card Handbook* (Ex. 1008) and compared those with the same section of *Handbuch der Chipkarten* (Exs. 1008-1011). I understand the translation of those sections from German to English are accurate in all material respects. This includes, but is not limited to Chapter 2 (specifically 2.2), Chapter 3, Chapter 6, Chapter 11 (specifically 11.4), Chapter 12 (specifically those sections discussing computing architectures including Figures 12.2 and 12.3) and pages 36, 247, 655,

678 and 685, as referenced in this declaration.

X. CONCLUSION

124. For the reasons discussed in this declaration, it is my opinion that claims 1-24 of the '128 Patent are invalid as directed to unpatentable subject matter.

XI. APPENDIX A: CLAIM CHARTS

Organized Claims:

Fundamental Elements:	1. A manager system that permits access to a plurality of attractions, the system comprising:	8. An access system for use with user codes comprising:	18. A computer-implemented method of managing access to at least one tourist attraction, the method comprising:	Known in Prior Art and/or Conventional Use
	a network interface configured to:	a controller configured to	[Computer implemented method]	General purpose computers with a network interface and controlling software were well known in the prior art. <i>See ¶¶ 56-59.</i>
1. Receiving actual use data from reward terminals regarding user access to the attractions for a time period.	receive data corresponding to actual use of reward terminals to access respective attractions of the plurality of attractions for a time period,	receive data of actual use to access a plurality of attractions from the at least one reward terminal once every predetermined time period, and	receiving the user code at a reward terminal, recording, by the reward terminal, the use of the user code to access the reward associated with the at	Terminals were well known in the prior art. <i>See ¶ 69.</i> Telecommunications and exchange of data between the terminal and a computing device was well known in the prior art and convention use of a terminal. <i>See ¶¶ 58-66. See also ¶¶ 74-77.</i>

			least one tourist attraction; and	
2. Characteristic of Reward Terminals	the reward terminals being located in proximity to the plurality of attractions, being configured to access the respective attractions using at least one product code, the data identifying at least one attraction; and	[controller] be coupled to at least one reward terminal and configured to provide information to the at least one reward terminal, the at least one reward terminal being configured to access rewards using at least one user code,	the reward terminal being located in proximity to the at least one tourist attraction and being configured to access a reward associated with the at least one tourist attraction using the user code,	Placing reward terminals in the proximity of the attraction and coupling them with the controlling software was well known in the prior art. Creating an information model using a product code and attraction codes, and user codes would have been a conventional use of the terminals. <i>See ¶ 72. See also ¶¶ 93-94.</i>
3. Calculate an aggregated compensation by a controller	a controller to calculate an aggregated compensation for each attraction based on the actual use of the reward terminals to access the respective	calculate an aggregated compensation for each attraction based on the actual use of the reward terminals to access the respective attraction by a plurality of	transmitting the use of the user code to a controller for calculation of an aggregated compensation for the at least one tourist	Calculating aggregated compensation based on use has been done for a variety of applications, as detailed in the body of my declaration above. <i>See ¶¶ 81-92.</i> Cards, readable by

	<p>attraction by a plurality of users,</p> <p>wherein the controller does not compensate the attractions based on the actual use of the reward terminals at a time of the actual use of the reward terminals via a card.</p>	<p>users,</p> <p>wherein the controller does not compensate the attractions based on the actual use of the reward terminals at a time of the actual use of the reward terminals via a card; and</p>	<p>attraction based on the use of the reward terminals to access the at least one tourist attraction by a plurality of users, wherein the controller does not compensate the attractions based on the actual use of the reward terminals at a time of the actual use of the reward terminals via a card.</p>	<p>terminals and card readers, associated with the code is a conventional use of card readers / terminals.</p> <p><i>See ¶¶ 53-54.</i></p>
4. Databases	<p>a database to store the at least one product definition; a database to store the data corresponding to the actual use of</p>	<p>a database, coupled to the controller, that stores the information to be provided to the at least one reward</p>		<p>Databases storing information, in general, and specifically related to the actual use, were well known in the prior art. Such as use of the terminal and database would have been</p>

	the reward terminals to access the attractions; and	terminal and the data received from the at least one reward terminal;		conventional. <i>See ¶¶ 78-80.</i>
5. Information Model & Business Logic	<p>[the controller] provide[s] at least one product definition to the reward terminals,</p> <p>the at least one product definition including associations between the at least one product code and the respective attractions,</p> <p>whereby a change in the associations between the at least one product code and the respective attractions changes the access to the</p>	<p>wherein the information includes an attraction list of attractions accessible from the at least one reward terminal and</p> <p>a product list of attractions that are accessible with each user code,</p> <p>whereby a change in the product list of attractions changes the rewards that are accessible with the at least one user code; and</p>	<p>associating a user code with a product, the product associated with the at least one tourist attraction;</p> <p>whereby a change in the product changes the rewards accessible via the reward terminal using the at least one user code;</p>	<p>Information models and in context of cards was well known in the prior art. Associating codes with the users and the attractions would have been a conventional use of the known technology. <i>See ¶¶ 95-96.</i></p> <p>Storing of information was very standard in the prior art. <i>See also</i> The “C” programming language (Ex. 1015) for exemplary data structures.</p>

	respective attractions via the reward terminals using the at least one product code;	wherein the data includes a list of user codes and attractions, the user codes associated with users who access rewards for the attractions via the reward terminal during the predetermined time period.		
Information Model & Business Logic (cont'd)	2. The manager system as claimed in claim 1, wherein the at least one product definition includes a list of the plurality of attractions.		19. The method as claimed in claim 18, wherein associating the user code with the product includes associating a user code with a product definition that comprises a list at least one tourist	Creating an information model using a product definition including a list of attractions, and associating that with user codes would have been a conventional use of the system. <i>See</i> ¶¶ 95-96. <i>See also</i> ¶ 72.

			attraction.	
<i>Periodic Data Exchange</i>	3. The manager system as claimed in claim 1, wherein the network interface is configured to enable periodic data transfer between the database and the reward terminals.	9. The system as claimed in claim 8, wherein the database is configured to communicate with the at least one reward terminal with predetermined periodicity to provide the information to the reward terminal and to receive the data from the at least one reward terminal. 10. The system as claimed in claim 9, wherein the predetermined periodicity is once a day.	20. The method as claimed in claim 18, further comprising periodically exchanging information between the reward terminal and a remote system.	Periodic communication with the reward terminal was known in the prior art and would have been a conventional use of the technology. See ¶¶ 58-66. See also ¶ 52.

<i>Smart Card Reading</i>	4. The product manager system as claimed in claim 1, wherein the reward terminals include smart card readers.	11. The access system as claimed in claim 8, wherein the user codes are encoded on programmable smart cards.	21. The method as claimed in claim 18, wherein receiving the user code at the reward terminal includes receiving the user code at a reward terminal comprising a smart card reader.	Smart cards were designed for association with a user, a promotion, or other data. Such was well known in the prior art and would have been a conventional use of smart cards, terminals, and smart card readers. <i>See ¶¶ 53-54.</i>
<i>Attraction constrained in time.</i>	5. The product manager system as claimed in claim 1, wherein at least one attraction of the plurality of attractions is constrained in time.	12. The access system as claimed in claim 8, wherein each attraction included in the attraction list and product list is defined by a unique attraction code. 13. The access system as claimed in	22. The method as claimed in claim 18, wherein associating the user code with the product includes associating a user code with a product that comprises at least one tourist attraction that is constrained in time.	Attractions were known to be constrained in time in many respects including holiday hours. Such an application of the system or method were well known in the art and conventional. <i>See ¶¶ 86-96.</i>

		<p>claim 12, wherein the unique attraction code includes information defining at least one access restriction for the attraction.</p> <p>15. The access system as claimed in claim 13, wherein the at least one access restriction includes a predetermined time period during which access to the attraction is valid.</p> <p>16. The access system as claimed in claim 15, wherein the predetermin</p>		
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		ed time period begins on a first actual use by a user.		
Attraction constrained by <i>frequency of use</i> .	6. The product manager system as claimed in claim 1, wherein at least one attraction of the plurality of attractions is constrained in frequency of use.	14. The access system as claimed in claim 13, wherein the at least one access restriction includes a predetermined number of times that access to the attraction is valid for each user code.	23. The method as claimed in claim 18, wherein associating the user code with the product includes associating a user code with a product that comprises at least one tourist attraction that is constrained in frequency of use.	Attractions were known to be constrained by single or multiple uses in the prior art. For example, it was well known in the prior art that a visitor can obtain a day pass to an amusement park or purchase a multi entry, multi day pass. Such an application of the system or method would have been conventional. See ¶¶ 86-96.
Reward terminal under attraction control.	7. The manager system as claimed in claim 1, wherein the reward terminals enable each of the respective	17. The system as claimed in claim 8, wherein the at least one reward terminal being further configured to enable	24. The method as claimed in claim 18, wherein the reward terminal being further configured to enable	It was well known in the art that reward terminals were capable of being used “offline” with the local attraction controlling access. Such an application of the system/method

	attractions to individually control access to the attraction.	each of the respective attractions to individually control access to the attraction based on the rewards.	the at least one tourist attraction to individually control access to the respective tourist attraction.	would have been conventional. <i>See</i> Chapter 11 of <i>Smart Card Handbook</i> (Ex. 1007) for the variety of terminal capability.
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Jurat

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1101 of Title 18 of the United States Code.

Respectfully submitted,


Roger Bodamer

Dated: June 17, 2016