Productverslag

SAP Business Communications Management BCM

Afstudeerstage

Michel van Rijnsbergen
Productverslag

Afstudeerstage

Organisatie: Accenture
Afdeling: SAP Sales & Logistics
Plaats: ’s-Hertogenbosch
Instelling: Avans Hogeschool
Afdeling: Academie voor ICT en Business
Plaats: Breda
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Studentnummer: 2019749
Datum: 15-06-2011
Versie: 1.0
### Versiebeheer

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<th>Auteur</th>
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Tabel 1: Versiebeheer

### Distributielijst

<table>
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<th>Naam</th>
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<th>Rol / functie</th>
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<tr>
<td>Bart Pedersen</td>
<td>Accenture Technology Solutions</td>
<td>Bedrijfsbegeleider</td>
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<tr>
<td>Jolanda van Houten</td>
<td>Avans Hogeschool</td>
<td>Docentbegeleider</td>
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Tabel 2: Distributielijst
Voorwoord

Dit productverslag is tot stand gekomen naar aanleiding van de afstudeerstage-opdracht van Michel van Rijnsbergen en is opgesteld naar aanleiding van de door Accenture Technology Solutions gegeven opdracht ‘SAP Business Communications Management BCM’. Dit productverslag en het bijbehorende product zullen beoordeeld worden door de examencommissie. De opdracht zal worden uitgevoerd bij Accenture Technology Solutions, op twee van de in totaal drie locaties, te ’s-Hertogenbosch en Almere.

Dit productverslag is bestemd voor de examencommissie van Avans Hogeschool te Breda, Academie voor ICT en Business. Enkele onderdelen van de opdracht, zoals de systeeminrichting, hebben meer tijd in beslag genomen dan was verwacht. Om een goed beeld te kunnen geven van wat de impact van deze ontwikkeling is op het totale project, is er in bijlage 1 een tijdlijn weergegeven.


‘s-Hertogenbosch, juni 2011

Michel van Rijnsbergen
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Samenvatting

De hoofdvraag voor deze afstudeeropdracht is dat in verband met de voordelen die Communication-Enabled Business Processes (CEBP) biedt, (potentiële) klanten van Accenture meer en meer op zoek zijn naar Communicatie Management Systemen (CMS) zoals SAP Business Communications Management (BCM).

Het belang van de hoofdvraag is dat de vraag/interesse van (potentiële) klanten van Accenture naar CMS zich binnen Accenture vertaalt naar de behoefte naar meer kennis en ervaring op het gebied van CMS in het algemeen en SAP BCM in het bijzonder. Op dit moment is men vanuit meerdere projecten binnen Accenture concreet op zoek naar deze kennis/ervaring. Het probleem is echter dat deze kennis in onvoldoende mate aanwezig is binnen Accenture. Wanneer deze opdracht niet zou worden uitgevoerd, zou Accenture onvoldoende kennis en ervaring op het gebied van CMS in het algemeen en SAP BCM in het bijzonder bezitten. Accenture zou dan in de toekomst niet kunnen voldoen aan de vraag/interesse van (potentiële) klanten naar kennis/ervaring op het gebied van CMS in het algemeen en SAP BCM in het bijzonder.

Uit de bovengenoemde probleemstelling is de projectopdracht naar voren gekomen. De projectopdracht bestaat uit twee onderdelen: een theoretisch onderzoek naar SAP BCM (en vergelijkbare producten) en een systeeminrichting.

In het theoretisch onderzoek zijn de antwoorden te vinden op de vragen welke zijn opgesteld door middel van brainstormsessies tussen bedrijfsbegeleider Bart Pedersen en afstudeerder Michel van Rijnsbergen. De antwoorden op deze vragen zijn onderbouwd door middel van een betrouwbare bron, zoals onderzoeksbureau Gartner, websites van SAP, Genesys en Avaya. Daarnaast is gebruik gemaakt van de kennis en ervaring van Accenture medewerkers, zoals Genesys-experts dhr. Martin van Medevoort en dhr. Bart Gastelaars en SAP expert dhr. Leo Moltzer.

Het uitvoeren van de systeeminrichting was meer tijdrovend dan verwacht. Er is aanzienlijk veel tijd gaan zitten in het voorbereiden van de systeeminrichting doordat de aanvragen van de benodigde hardware en software. Tijdens deze voorbereiding is er in Nederland contact geweest met dhr. Marco Bernardy voor het aanvragen van telefonie en messaging. Dhr. Bernardy heeft mij vervolgens in contact gebracht met dhr. Jean-Pierre Barraja, gevestigd in Frankrijk. Vervolgens is in overleg met dhr. Rob imhoff en dhr. Sicco Miedema uiteindelijk gestart met de installatie van de SAP BCM demo-omgeving. De installatie van deze demo-omgeving verliep helaas alles behalve vlekkeloos. Tijdens de installatie zijn verschillende issues boven water gekomen en er is dan ook veel tijd gaan zitten in het oplossen van deze issues.

Dit productverslag is opgebouwd uit vijf delen; conceptueel ontwerp, onderzoekstechnisch ontwerp, theoretisch onderzoek, systeeminrichting en deliverables. De eerste twee delen, conceptueel ontwerp en onderzoekstechnisch ontwerp, zijn methodieken om een onderzoek te onterpen en zijn afkomstig uit het boek Het ontwerpen van een onderzoek, geschreven door dhr. Piet Verschuren en dhr. Hans Doorewaard.
1. Inleiding

In verband met de voordelen die Communication-Enabled Business Processes (CEBP) biedt, zijn (potentiële) klanten van Accenture meer en meer op zoek naar Communicatie Management Systemen (CMS) zoals SAP Business Communications Management (BCM).


Uit de bovengenoemde probleemstelling is de projectopdracht naar voren gekomen. De projectopdracht bestaat uit twee onderdelen: een theoretisch onderzoek naar SAP BCM (en vergelijkbare producten) en een systeeminrichting.

Het doel van dit productverslag is het verslagleggen van het resultaat van de afstudeeropdracht. Dit productverslag en het bijbehorende resultaat van de afstudeeropdracht zullen in de eerste plaats beoordeeld worden door de afstudeerorganisatie/opdrachtgever en in de tweede plaats, de examencommissie van Avans Hogeschool te Breda, Academie voor ICT en Business.

Deel I: Conceptueel ontwerp

2. Doelstelling

In dit hoofdstuk wordt de doelstelling besproken. Eerst wordt het projectkader besproken en daarna worden de doelstellingen besproken.

2.1. Projectkader

In verband met de voordelen die “Communication-Enabled Business Processes” (CEBP) biedt, zijn (potentiële) klanten van Accenture meer en meer op zoek naar Communicatie Management systemen zoals SAP BCM. Onderzoek van onderzoeksbureau Gartner toont ook aan dat bij organisaties die CEBP hebben ingezet de volgende veranderingen/verbeteringen zijn geconstateerd:

- Tot en met 2010, 80% van de bedrijven die CEBP hebben ingezet zal een aanzienlijk concurrentievoordeel en hogere omzet behalen;
- Tot en met 2010, van 10% van de bedrijfsprocessen die communicatie-enabled zijn zal 50% een efficiency verbetering ervaren;
- Tegen 2008 zullen leidende unified communications-leveranciers tools integreren om CEBP mogelijk te maken.

De vraag/interesse van (potentiële) klanten van Accenture naar CMS vertaalt zich binnen Accenture naar de behoefte naar meer kennis en ervaring op het gebied van CMS in het algemeen en SAP BCM in het bijzonder. Op dit moment is men vanuit meerdere projecten binnen Accenture concreet op zoek naar deze kennis/ervaring. Het probleem is echter dat deze kennis in onvoldoende mate aanwezig is binnen Accenture.

2.2. Doelstellingen

Onderzoek naar de mogelijkheden van Communicatie Management Systemen op het gebied van integratie met SAP CRM 7.0.

Productvergelijking tussen een aantal in het onderzoek te bepalen Communicatie Management Systemen (in ieder geval Genesys en SAP BCM), toegespitst op de integratiemogelijkheden met SAP CRM 7.0.

Inventarisatie van de mogelijkheden (telefonie en messaging) in SAP CRM 7.0 met betrekking tot afhandeling van klantcontact geïnitieerd vanuit communicatiekanalen welke via SAP BCM geïntegreerd worden.

Advies waarin aangegeven wordt, op basis van de productvergelijking van Communicatie Management Systemen, welk systeem het best gekwalificeerd is voor integratie met SAP CRM 7.0. De kwalificatiecheck wordt (indien mogelijk) uitgevoerd op basis van een requirements-lijst, op te stellen door Accenture Technology Solutions.

In dit hoofdstuk is de doelstelling besproken. Eerst is het projectkader besproken en daarna zijn de doelstellingen besproken.

In hoofdstuk 3 wordt het onderzoeksmodel besproken.

3. Onderzoeksmodel

In dit hoofdstuk wordt het onderzoeksmodel besproken en wordt de verklaring van het onderzoeksmodel besproken.

![Diagram van het onderzoeksmodel]

Figuur 1: Onderzoeksmodel

3.1. Verklaring onderzoeksmodel

**Onderdeel (a)**
In het (a)-onderdeel van het onderzoeksmodel wordt gezocht naar theorie over SAP BCM, Genesys en Avaya. Tevens zal er een vooronderzoek plaatsvinden. Vanuit de theorie en het vooronderzoek zullen de integratiemogelijkheden duidelijk worden.

**Onderdeel (b)**
In het (b)-onderdeel van het onderzoeksmodel worden de onderzoeksobjecten (productvergelijking, integratiemogelijkheden en inventarisatie van scenario’s) geconfronteerd. Deze confrontatie levert analyseresultaten op.

**Onderdeel (c)**
In het (c)-onderdeel van het onderzoeksmodel worden de onderzoeksresultaten vergeleken.

**Onderdeel (d)**
In het (d)-onderdeel van het onderzoeksmodel wordt het advies gegeven en zal er een antwoord worden gegeven op de drie verschillende centrale vragen met bijbehorende deelvragen.
In dit hoofdstuk is het onderzoeksmodel besproken en is de verklaring van het onderzoeksmodel besproken.

In hoofdstuk 4 wordt de vraagstelling besproken.

### 4. Vraagstelling

In dit hoofdstuk wordt de vraagstelling besproken. Centrale vraag 1 heeft betrekking op het (a)-onderdeel van het onderzoeksmodel, centrale vraag 2 heeft betrekking op het (b)-onderdeel van het onderzoeksmodel en centrale vraag 3 heeft betrekking op het (c)-onderdeel van het onderzoeksmodel. Naast deze centrale vragen zijn bijbehorende deelvragen opgenomen, deze deelvragen behoren bij centrale vraag 1, 2 of 3.

#### 4.1. Centrale vraag 1 (a)

Wat zijn Genesys en Avaya in het algemeen en SAP BCM in het bijzonder (toegespitst op de integratiemogelijkheden met SAP CRM 7.0).

##### 4.1.1. Deelvragen behorend bij centrale vraag 1

- Wat is SAP BCM?
- Wat is Genesys?
- Wat is Avaya?

#### 4.2. Centrale vraag 2 (b)

Wat zijn de verschillen tussen SAP BCM, Genesys en Avaya (toegespitst op de integratiemogelijkheden met SAP CRM 7.0).

##### 4.2.1. Deelvragen behorend bij centrale vraag 2

**SAP BCM**
- Voor welke klanten (branche) en welk soort klanten (industrie)?
- Wat is de positie ten opzichte van andere CRM pakketten?
- Wat zijn voor Accenture de concurrenten op gebied van BCM?
- Wat is de visie ten aanzien van SAP BCM?
- Wat zijn de integratiemogelijkheden?
- Wie zijn de (Accenture) klanten die al SAP BCM gebruiken?
- Wat zijn de Accenture projecten met SAP BCM?
- Waarom hebben deze projecten/klanten voor SAP BCM gekozen?

**Genesys**
- Wat zijn de verschillen met SAP BCM?
- Wat zijn de voordelen/nadelen (matrix)?
- Wat is het marktaandeel?

**Avaya**
- Wat zijn de verschillen met SAP BCM?
Wat zijn de voordelen/nadelen (matrix)?
Wat is het marktaandeel?

Wat zijn de mogelijkheden (scenario’s) in SAP CRM 7.0?

4.3. Centrale vraag 3 (c)
In welke situatie (voor welke klant) is SAP BCM, Genesys of Avaya de beste optie?

4.3.1. Deelvragen behorend bij centrale vraag 3
• Case 1: wat is de beste optie in deze situatie?
• Case 2: wat is de beste optie in deze situatie?
• Case 3: wat is de beste optie in deze situatie?

In dit hoofdstuk is de vraagstelling besproken. Eerst is centrale vraag 1 besproken, daarna is centrale vraag 2 besproken en tot slot is centrale vraag 3 besproken. Naast deze centrale vragen zijn bijbehorende deelvragen besproken, deze deelvragen behoren bij centrale vraag 1, 2 of 3.

In hoofdstuk 5 wordt de begripsbepaling besproken.

5. Begripsbepaling

In dit hoofdstuk wordt de begripsbepaling besproken. Eerst wordt het begrip communicatiemanagement besproken, vervolgens wordt het begrip systeemintegratie besproken en tot slot worden de begrippen SAP CRM en SAP BCM besproken.

Communicatiemanagement → Systeemintegratie → SAP CRM → SAP BCM

Communicatiemanagement
“Communicatiemanagement is een begrip dat pas sinds de jaren tachtig als zodanig wordt gebruikt. Sinds die tijd is er naar dit vakgebied slechts weinig onderzoek gedaan. Wanneer wel onderzoek is gedaan, wordt in die studies de term communicatiemanagement vaak verschillend opgevat. Wanneer je op zoek gaat naar literatuur over communicatiemanagement, kom je 2 namen veelvuldig tegen: Grunig en Van Ruler.

De definitie die Grunig hanteert voor communicatiemanagement is: het geheel van planning, uitvoering en evaluatie van de communicatie van een organisatie met zowel interne als externe publieksgroepen die de mogelijkheden van een organisatie beïnvloeden om gestelde doelen te bereiken. Van Ruler definiere communicatiemanagement als: een specialistische functie binnen een organisatie, die zich bezighoudt met het initiëren, sturen en faciliteren van communicatie- en informatiedepotten in de context van de organisatie, binnen een bepaalde beleidscader en vanuit de optiek van het functioneren van die organisatie in haar omgeving. Wanneer we beide definities gaan vergelijken zien we veel overeenkomsten. Het is planmatig (bij Van Ruler: beleid), communicatie met de publieksgroepen (bij Van Ruler: omgeving) en met een bepaald doel (bij Van Ruler: functioneren). Wanneer we een meer op de praktijkgerichte definitie willen samenstellen van het begrip communicatiemanagement, krijgen we: Het planmatig opzetten, uitvoeren en evalueren van communicatie van een organisatie met haar interne en externe publieksgroepen, ter ondersteuning aan de organisatie doelstellingen.” [1]
Systeemintegratie

“Een definitie van systeemintegratie kan vanuit twee gezichtspunten worden benaderd: een technische en een bedrijfsmatige. Laten we met de eerste beginnen. Systeemintegratie is het bij elkaar brengen van diverse componenten/subsystemen in een systeem om ervoor te zorgen dat alle subsystemen met elkaar functioneren als een systeem. Op het vlak van informatietechnologie is systeemintegratie het proces dat verschillende computersystemen en softwareapplicaties fysiek of functioneel aan elkaar koppelt.

Het kan nog verder gaan door alle faciliteiten binnen een organisatie in een systeem onder te brengen. Denk dan aan koppeling van systemen voor telefonie, video, geluid, beveiliging en datanetwerken. Hier wagen de meeste organisaties zich nog niet aan.

De bedrijfsmatige kijk op systeemintegratie klinkt veel simpeler: de juiste mensen moeten op het juiste moment kunnen beschikken over de juiste informatie die nodig is om hun werk te doen. Dit is organisatieoverstijgend, omdat meer en meer binnen de keten (geautomatiseerd) wordt samengewerkt. Daarbij willen de gebruikers liefst van doen hebben met één intuitief bruikbaar systeem. Ze willen zo weinig mogelijk klikken of schakelen tussen applicaties om hun taken te vervullen.” [2]

SAP CRM

“In de huidige marktomstandigheden blijven ‘Best-Run Businesses’ zich richten op hun meest waardevolle bezit - hun klanten. Ondernemingen proberen hun beste klanten te behouden en elke interactie met de klant te optimaliseren, of het nu gaat om verkoop, service of marketing.

In tegenstelling tot andere software voor relatiebeheer kunt u met SAP Customer Relationship Management (SAP CRM), onderdeel van de SAP Business Suite, niet alleen uw kortetermijndoelstellingen halen - kostenbesparing en slagvaardige besluitvorming - maar uw onderneming ook versterken met verschillende mogelijkheden om op termijn effectiever te concurreren.

Dankzij SAP hebben ‘Best-Run Businesses’ in meer dan 26 branches een in alle opzichten excellent relatiebeheer gerealiseerd.” [3]

SAP BCM

“SAP Business Communications Management biedt een IP gebaseerd communicatieplatform waarmee organisaties al hun medewerkers, inclusief telemarketingspecialisten, klantenservicemedewerkers, telefonistes, kantoorpersoneel, mobiele experts en managers laten profiteren van de voordelen van IP-telefonie. Men is hierdoor in staat om optimaal te communiceren met elkaar en met de klant, en bovendien bent u hierdoor in staat om uw exploitatiekosten significatief te verlagen. Zowel mensen, processen, kennis als contactpunten kunnen verspreid zijn over diverse locaties, functies en organisaties. Effectieve marketing, verkoop en dienstverlening vereisen een oplossing die de communicatie naadloos beheert en coördineert, zowel binnen als buiten de organisatie.

De combinatie van CRM en SAP Business Communications Management software (van het recentelijk overgenomen Wicom Communications) maakt het organisaties mogelijk communicatiegestuurde bedrijfsprocessen te creëren door multichannelcommunicatie te integreren met alle klantgerichte bedrijfsprocessen.
Met SAP Business Communications Management kunt u resources beheren voor alle locaties, bedrijfskennis optimaal toepassen en zorgen voor een uniforme, consistente klantervaring bij alle contactmogelijkheden. Van spraak en SMS tot webcontacten en e-mail. U kunt ook nieuwe processen en virtuele teams opzetten en managen. Zo brengt u mensen, kennis en technologie samen om op een effectieve en efficiënte manier en tegen lage kosten tegemoet te komen aan de wensen van uw klanten.” [4]

In dit hoofdstuk is de begripsbepaling besproken. Eerst is het begrip communicatiemanagement besproken, vervolgens is het begrip systeemintegratie besproken en tot slot zijn de begrippen SAP CRM en SAP BCM besproken.

In hoofdstuk 6 worden de onderzoeksstrategieën besproken.

Deel II: Onderzoekstechnisch ontwerp

6. Onderzoeksstrategieën

In dit hoofdstuk worden de onderzoeksstrategieën besproken.

1. Survey;
2. Experiment;
3. Casestudy;
4. Gefundeerde theoriebenadering;
5. Bureauonderzoek.

Twee van deze vijf onderzoeksstrategieën zullen gebruikt worden in dit theoretisch onderzoek:

Casestudy
Vergelijkende casestudy door middel van de hiërarchische methode. De reden waarom er voor deze strategie is gekozen, is omdat in de eerste fase van deze strategie de cases afzonderlijk van elkaar worden onderzocht (SAP BCM, Genesys en Avaya) en in de tweede fase met elkaar worden vergeleken. Dit is exact wat Accenture met deze afstudeeropdracht wil bereiken.

Bureauonderzoek
Kwalitatief bureauonderzoek door middel van literatuur- en secundair onderzoek.

- Het gebruik van bestaand materiaal, gecombineerd met reflectie.
- Het gebruik van materiaal vanuit een ander perspectief dan waarvoor het geproduceerd was.

De reden waarom er voor deze strategie is gekozen, is omdat volgens deze strategie het literatuuronderzoek bestaat uit een bestudering (en vergelijking) van de literatuur en het secundair onderzoek bestaande informatie herordent en vanuit een nieuw gezichtspunt (productvergelijking) analyseert en interpreteert. Dit sluit exact aan op de wensen en eisen van Accenture ten opzichte van deze afstudeeropdracht.

In dit hoofdstuk zijn de onderzoeksstrategieën besproken.

In hoofdstuk 7 wordt het onderzoeksmateriaal besproken.
7. Onderzoeksmateriaal

In dit hoofdstuk wordt het onderzoeksmateriaal besproken.

- Personen
- Media
  - Gedrukt
    - Kranten
    - Tijdschriften
  - Elektronisch
    - Radio/tv
    - Internet
    - E-mail

In dit hoofdstuk is het onderzoeksmateriaal besproken.

Deel III: Theoretisch onderzoek

Het theoretisch onderzoek is ondergebracht in bijlage 2.

Deel IV: Systeeminrichting

Het realiseren van de systeeminrichting heeft veel tijd in beslag genomen. Vanaf het voorbereiden van de systeeminrichting in week vijf, had ik verwacht dat na enkele weken (lees: maximaal vier) kon worden gestart met de systeeminrichting. Door verschillende omstandigheden is dit niet gelukt en kon pas worden gestart met de systeeminrichting in week zestien. De belangrijkste omstandigheden waardoor pas in week zestien gestart kon worden met de systeeminrichting zijn; dat het voor medewerkers van Accenture lastig is om tijd vrij te maken voor dit soort projecten, omdat deze medewerkers zelf aan andere projecten werken. Deze medewerkers; dhr. Rob Imhoff en dhr. Sicco Miedema hebben wanneer mogelijk wat tijd vrij gemaakt om naar mijn voorbereidingen en realisatie te kijken en mij waar nodig hulp te bieden.

Wanneer in week zestien kon worden gestart met de realisatie van de systeeminrichting, ben ik op dinsdag naar het kantoor in Almere afgereisd en was het de bedoeling dat ik daar de gehele dag, samen met dhr. Miedema, zou werken aan de installatie van SAP BCM. Dit ging helaas niet door, omdat dhr. Miedema enkele issues in klantsystemen moest oplossen. Dit zou de hele dag duren en er was helaas weer geen tijd om te beginnen met de installatie. Op dat moment heb ik dhr. Miedema het voorstel gedaan om zelf met de installatie te starten en gevraagd of dhr. Miedema, tussen het oplossen van de issues in klantsystemen door, kon helpen met oplossen van mijn issues en vragen. Dhr. Miedema stemde hiermee in en vervolgens ben ik gestart met de installatie. Helaas verliep deze installatie alles behalve vlekkeloos, nog voor kon worden begonnen met de installatie werd er door het systeem al een foutmelding gegeven waardoor niet kon worden gestart met de installatie. Na het oplossen van dit issue ben ik begonnen met de installatie. Tijdens deze installatie zijn wij tegen nog veel meer issues aangelopen. Na een gesprek met dhr. Miedema over deze issues heeft hij mij laten weten dat deze issues waarschijnlijk ontstaan omdat SAP deze software (BCM) heeft overgenomen.
van Wicom. Dhr. Miedema heeft mij laten weten dat de installatie van andere SAP-software in principe altijd zonder veel issues verloopt.

Helaas is het door de beperkte beschikbare tijd van dhr. Imhoff en dhr. Miedema op dit moment nog niet gelukt om de installatie af te ronden. Op dit moment kan al wel worden ingelogd op de ‘System administrator’ voor het configureren van de software. Daarnaast kan gedeeltelijk worden ingelogd op de ‘Communication Desktop (CDT)’ om de werking van SAP BCM te testen. Tijdens de laatste twee weken van deze afstudeerstage zal nog hard worden gewerkt aan het afronden van de systeeminrichting, door SAP BCM te koppelen aan SAP CRM en het realiseren van telefonie en messaging. Persoonlijk ben ik van mening dat door de genoemde problemen, het doorlopen van de verschillende procedures en de beperkt beschikbare tijd van mijn collega’s het niet mogelijk was om deze opdracht op dit moment volledig gerealiseerd te hebben.

Deel V: Deliverables

Deliverables Accenture
De belangrijkste veranderingen/verbeteringen voor Accenture zijn onder andere:

- Productinformatie
  - Productvergelijking tussen een aantal in het onderzoek te bepalen Communicatie Management Systemen, toegespitst op de integratiemogelijkheden met SAP CRM 7.0.
  - Inventarisatie van de scenario’s (telefonie en messaging) in SAP CRM 7.0 met betrekking tot afhandeling van klantcontact geïnitieerd vanuit communicatiekanalen welke via SAP BCM geïntegreerd worden.

- Advies
  - Na het uitvoeren van de productvergelijking kan er een op feiten gebaseerd advies worden gegeven worden waarin aangegeven wordt, op basis van de productvergelijking van Communicatie Management Systemen, in welke situatie men wel of niet voor SAP BCM moet kiezen ten opzichte van andere CMS pakketten. De kwalificatiecheck wordt uitgevoerd op basis van een requirements-lijst, op te stellen door Accenture Technology Solutions. Door middel van dit advies, zal Accenture nu een passend advies kunnen geven aan klanten welke geïnteresseerd zijn in Communicatie Management Systemen.

- Systeeminrichting
  - Na de inrichting van de integratie tussen SAP BCM en SAP CRM 7.0 en de inrichting van een aantal nader te bepalen scenario’s met betrekking tot de afhandeling van klantcontacten geïnitieerd vanuit de communicatiekanalen welke via SAP BCM geïntegreerd zijn, is het voor Accenture mogelijk om aan klanten te laten zien wat Communicatie Management Systemen precies doen en medewerkers kunnen in een demo-omgeving kijken wanneer een klant een probleem heeft en hij daar hulp bij nodig heeft.

- Systeemdocumentatie
  - Systeemdocumentatie ten aanzien van de inrichting van SAP BCM (en SAP CRM) en de betreffende scenario’s. Deze documentatie dient in het Engels geschreven te
worden, omdat Engelstalige Accenture-medewerkers in het binnen- en buitenland deze documentatie ook moeten kunnen lezen. Deze documentatie zal gebruikt worden voor het opbouwen van kennis door Accenture-medewerkers.

**Deliverables afstudeerder**
De belangrijkste veranderingen/verbeteringen voor de afstudeerder zijn onder andere:

- Opdoen van SAP BCM kennis
- Opdoen van SAP CRM kennis
- Theoretisch onderzoek
- Advies
- Systeeminrichting
Conclusies


In het theoretisch onderzoek zijn de antwoorden te vinden op de vragen welke zijn opgesteld door middel van brainstormsessies tussen bedrijfsbegeleider Bart Pedersen en afstudeerder Michel van Rijnsbergen. De antwoorden op deze vragen zijn onderbouwd door middel van een betrouwbare bron, zoals onderzoeksbureau Gartner, websites van SAP, Genesys en Avaya. Daarnaast is gebruikgemaakt van de kennis en ervaring van Accenture medewerkers, zoals Genesys-experts dhr. Martin van Medevoort en dhr. Bart Gastelaars en SAP-expert dhr. Leo Moltzer.

Het uitvoeren van de systeeminrichting was meer tijdrovend dan verwacht. Er is aanzienlijk veel tijd gaan zitten in het voorbereiden van de systeeminrichting door het aanvragen van de benodigde hardware en software. Tijdens deze voorbereiding is er in Nederland contact geweest met dhr. Marco Bernardy voor het aanvragen van telefonie en messaging. Dhr. Bernardy heeft mij vervolgens in contact gebracht met dhr. Jean-Pierre Barraja, gevestigd in Frankrijk. Vervolgens is in overleg met dhr. Rob Imhoff en dhr. Sicco Miedema uiteindelijk gestart met de installatie van de SAP BCM demo-omgeving. De installatie van deze demo-omgeving verliep helaas alles behalve vlekkeloos. Tijdens de installatie zijn verschillende issues boven water gekomen en er is dan ook veel tijd gaan zitten in het oplossen van deze issues.

Helaas is de demo-omgeving op dit moment nog niet helemaal afgerond. Op dit moment kan gebruikgemaakt worden van de ‘System administrator’ voor het configureren van SAP BCM en kan er gedeeltelijk gebruikgemaakt worden van de ‘Communication Desktop (CDT)’. Tijdens de laatste weken van deze afstudeerstage zullen wij proberen om de SAP BCM demo-omgeving op een juiste manier te installeren en configureren, zodat naast het gebruik van het theoretisch onderzoek, ook gebruik kan worden gemaakt van de demo-omgeving.
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Geraadpleegd 9 mei 2011.

Boeken en publicaties
Deventer: Kluwer.

Den Haag: Lemma.

Bijlage 1: Verklarende begrippen en woordenlijst

<table>
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<th>Begrippen/woorden</th>
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<td>SAP CRM</td>
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Tabel 3: Verklarende begrippen en woordenlijst
Bijlage 2: Theoretisch onderzoek

1. Introduction

Due to the advantages Communication-Enabled Business Processes (CEBP) offers, (potential) customers of Accenture are increasingly looking for Communication Management Systems (CMS) such as SAP Business Communications Management (BCM). This results in the internship assignment SAP Business Communications Management BCM. The assignment was carried out by graduate Michel van Rijnsbergen, Business Information Technology student at Avans University in Breda.

The demand / interest of (potential) customers for CMS translates Accenture into the need for more knowledge and experience of CMS in general and SAP BCM in particular. Currently, people from several projects within Accenture specifically looking for this knowledge / experience. The problem is that this knowledge is insufficient available within Accenture. When this internship assignment would not be executed, Accenture has insufficient knowledge and experience of CMS in general and SAP BCM in particular. In the future Accenture would satisfy the demand / interest of (potential) customers to knowledge / experience of CMS in general and SAP BCM in particular.

From the problem mentioned above, the project assignment is emerged. The project consists of two parts: a theoretical research of SAP BCM (and similar products) and a system design. The purpose of this document is to describe the results obtained from the theoretical research and findings during the system design.

This document consists of four parts, part one: conceptual design, part two: technical research design, part three: theoretical research and finally part four: system design. For the writing of this theoretical research, the book ‘Het ontwerpen van een onderzoek’ of P. Verschuren and H. Doorewaard is used.
Part I: Conceptual design

This part contains the conceptual design. Chapter 2 contains the objective, chapter 3 contains the research model, chapter 4 contains the questioning and chapter 5 contains the definitions.

2. Objective

In this chapter the project framework and targets are described.

2.1. Project framework

In relation to the benefits that “Communication-Enabled Business Processes” (CEBP) offers are (potential) customers of Accenture increasingly searching for Communication Management systems like SAP BCM. Research by Gartner\(^2\) also indicates that organizations which have deployed CEBP noted the following changes / improvements:

- **Competitive and revenue differentiation**
  Through 2010, 80% of businesses that have deployed CEBP will obtain significant competitive and revenue differentiation because of it.

- **Efficiency improvement**
  Through 2010, 10% of the business processes that have been communication-enabled will experience a 50% efficiency improvement.

- **Communications solution vendor focus**
  By 2008, leading unified communications solution vendors will incorporate tools designed to enable CEBP.

The demand / interest of (potential) Accenture customers to CMS translates at Accenture into the need for more knowledge and experience of CMS in general and SAP BCM in particular. Currently, people from several projects within Accenture specifically looking for this knowledge / experience. The problem is that this knowledge is insufficient available within Accenture.

2.2. Targets

Research into the possibilities of Communications Management Systems for integration with SAP CRM 7.0.

Product comparison between a number of Communications Management Systems, to determine during the research (at least Genesys and SAP BCM), focusing on the integration with SAP CRM 7.0.

Inventory of the possibilities (scenarios) in SAP CRM 7.0 on handling customer contact, initiated by the integrated communication channels of the Communication Management system.

Advice, based on the product comparison of Communications Management Systems, indicates which system is best qualified for integration with SAP CRM 7.0. Qualification check is performed on a requirements list (if possible) drawn up by Accenture Technology Solutions.

3. Research model

In this chapter the research model is accommodated.

![Research model diagram]

3.1. Declaration research model

Section (a)
In this section of the research model, the theory of SAP BCM, Genesys and Avaya will be explored also there will be a research. From theory and research, the integration possibilities become clear.

Section (b)
In this section of the research model, the research objects (product comparison, integration capabilities and Inventory or scenarios) are confronted. This confrontation provides analytical results.

Section (c)
In this section of the research model, the comparison of the research is conducted.

Section (d)
In this section of the research model, the advice is given and there will be an answer to the key questions and its sub-questions.

4. Questioning
In this chapter the key questions and related sub-questions are described.

4.1. Key question 1 (a)
What is Genesys and Avaya in general, and SAP BCM in particular (focused on the integration with SAP CRM 7.0)?
4.1.1. Sub-questions related to key question 1

- What is SAP BCM?
- What is Genesys?
- What is Avaya?

4.2. Key question 2 (b)
What are the differences between SAP BCM, Genesys and Avaya (focused on the integration with SAP CRM 7.0)?

4.2.1. Sub-questions related to key question 2

**SAP BCM**
- For which customers and what kind of customers?
- What is the position relative to other CMS packages?
- What are Accenture's competitors in the field of BCM?
- What is the vision of SAP BCM?
- What are the integration capabilities?
- Who are (Accenture) customers who already use SAP BCM?
- What are the Accenture projects with SAP BCM?

**Genesys (Appendix B)**
- What are the differences with SAP BCM?
- What is the market share?

**Avaya (Appendix C)**
- What are the differences with SAP BCM?
- What is the market share?

- What are the possibilities (scenarios) in SAP CRM 7.0?

4.3. Key question 3 (c)
In what situation (for which customer) is SAP BCM, Genesys or Avaya the best option?

4.3.1. Sub-questions related to key question 3
- Case 1: what is the best option in this situation?
- Case 2: what is the best option in this situation?
- Case 3: what is the best option in this situation?

5. Definitions

Communications management  
⇒ Systems integration  
⇒ Solution

**Communications management**

“Communications management is the systematic planning, implementing, monitoring, and revision of all the channels of communication within an organization, and between organizations; it also includes the organization and dissemination of new communication directives connected with an organization,
network, or communications technology. Aspects of communications management include developing corporate communication strategies, designing internal and external communications directives, and managing the flow of information, including online communication. New technology forces constant innovation on the part of communications managers.

As a manager, one must take a contingency approach to communicating with their employees and communicate on a personal level. It’s the manager’s responsibility to determine if their employee’s personality falls under the following: Reactors, Workaholics, Persisters, Dreamers, Rebels, or Promoters.  

**Systems integration**

“Systems integration is the process of linking together different computing systems and software applications physically or functionally, to act as a coordinated whole.”

**Solution**

“A solution is an answer(s) suggested or implemented to try and solve a question or problem. A solution can be either simple or complex and may require few resources or many resources. For example, the solution to a math question may be addressed quickly with a calculator but the solution to preventing accounting fraud may be more complex and require a great deal of time to find.” [1]

**Part II: Research technical design**

This part contains the research technical design. Chapter 6 contains the research strategies and chapter 7 contains the research materials.

**6. Research strategies**

6. Survey;  
7. Experiment;  
8. Case study;  
9. Grounded theory approach;  
10. Desk research.

Two of those five research strategies will be used in this theoretical research:

**Case study**

Comparative case study using the hierarchical method.

**Desk research**

Qualitative desk research through literature review and secondary research.

- Use of existing material, combined with reflection.
- Using material from a different perspective than that it was produced.

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[3] CIS 8020 - Systems Integration, Georgia State University OECD
7. Research materials

- Persons
- Media
  - Printed
    - Newspapers
    - Magazines
  - Electronic
    - Radio/television
    - Internet
    - E-mail

Part III: Theoretical research

This part contains the results of research into the possibilities of SAP BCM in integration with SAP CRM 7.0. In this part, the following options were examined: chapter 8 contains what is Genesys and Avaya in general, and SAP BCM in particular (focused on the integration with SAP CRM 7.0)?, chapter 9 contains what are the differences between SAP BCM, Genesys and Avaya (focused on the integration with SAP CRM 7.0)? and chapter 10 contains in what situation (for which customer) is SAP BCM, Genesys or Avaya the best option?

8. What is Genesys and Avaya in general, and SAP BCM in particular (focused on the integration with SAP CRM 7.0)?

In this chapter is described what is SAP BCM?, what is Genesys? and what is Avaya?

8.1. What is SAP BCM?

“The core functionality of SAP Business Communications Management consists of call handling, contact routing, IVR and voicemail services, and directory and presence services. Management functionality consists of reporting, monitoring, logging and quality monitoring services. These are the capabilities offered by SAP BCM. However, not all applications use fully all these capabilities.

Call Handling

With SAP BCM it is possible to do the following call handling operations:

- Answer or reject incoming calls
- Hang up calls
- Put calls on hold
- Retrieve calls from hold
- Make outbound calls
- Make consultation calls
- Toggle between calls (for example between an original call and a consultation call)
- Connect two active calls
- Transfer calls (direct and consultative transfers)
- Make conference calls
There are two ways to transfer an active call to another number. Transferring a call without prior consultation with the person to whom the call is being transferred is called transfer or direct transfer. Another way is to first consult the person to whom the call is being transferred and do the actual transfer only after that. The latter way is called warm transfer or consultative transfer.

Ad-hoc conferencing
A conference call can be established between three or more persons. The person initiating the conference call, after having answered or placed a call, can connect additional persons wishing to participate in the conference call. New callers can also join the conference.

The connection is multicast enabled: all participants can speak and hear one another. Additionally, the person who initiated the conference call has the ability to have a private conversation either with one participant or with several by putting participants on hold, or by connecting or disconnecting participants. Because the conference call is implemented on the client’s PC, the number of participants is limited to the processing power of the PC. An up-to-date workstation can handle 6-way conference calls without any effect on sound quality.

Contact Routing
Contacts handled by SAP BCM can be divided into three groups: contacts to queue numbers, contacts to personal numbers and to outgoing contacts. Section 1 gives an overview of how contacts to queue numbers are routed. Section 2 discusses outgoing call routing. Calls to a personal number are primarily treated as the personal reachability service (PRS) profile defines.

1) Routing to Queue Numbers
With BCM it is possible to implement routing schemes from a basic ACD routing to a sophisticated conditional routing and data-directed routing.

a) ACD routing
Implementing basic ACD routing routes calls to queues based on the called number, selects an agent using the hunt group mode (round robin) and selects calls using the first-in-first-out algorithm. It is also possible to play prompts to the callers in queues and route calls to overflow queues.

b) Conditional routing
Conditional routing takes into account the current situation when making routing decisions and dynamically adapts to the situation. Conditional routing uses routing steps with the if-then logic. The routing conditionals can be, for example, purpose of call, time of call, and call center staffing.

c) Data-directed routing
Data-directed routing uses customer information when making routing decisions. It requires either access to a customer information database or some kind of a voice response application for getting the information. Both of these methods can be used with SAP BCM. Data-directed routing can be used, for example, for prioritizing high-value customers.

d) Routing process
An overall routing scheme can be divided into several subprocesses: information collection, queue selection, agent selection, queueing, and call selection.
Information collection
To enable routing, the system collects and monitors information that is needed in order to make the routing decisions. To identify who is calling and why, the following information and methods can be used:

- Calling line number
- Called number
- IVR prompting
- IVR application to retrieve data from the database

The call information (date and time of a call) can be compared to schedules defined for the queues to determine the appropriate routing action. The agent status information is monitored to identify which agents are available.

Queue selection
When the system has the necessary information, it can route a call to an appropriate queue. Depending on the selected routing method, the following approaches can be used:

- Queue is selected based on the B number (in other words, the number to which the call is made)
- IVR application is used to select the queue: selection can be made based on, for example, a user input or an A number.
- Queue is selected based on the conditional routing conditions.

Agent selection
If there are no other calls in the queue, the agent selection process chooses the agent to whom the call is routed. SAP BCM offers the following agent selection methods:

- Longest idle time is a method of routing an incoming contact to the agent who has been idle the longest. This enables effective balancing of loads among all agents serving in the same queue.
- Skill-based routing (SBR) is a method of routing telephone calls based on agent skills. When there is an inbound call to a queue that is using skill-based routing, the call is transferred to the agent that has the highest level of the required skill(s).
- Agent priority can be used as a factor in agent selection. It is possible to define a priority value for each agent. When selecting a free agent, the system picks the agent with the highest priority value.

Queuing
If there are other calls in the queue, the queuing process monitors the situation, plays prompts, and so on. While a call is in a queue, the system tracks the order of the calls, plays announcements to the callers, and monitors agent availability. In addition, the system sees if rerouting (queue overflow action) is needed.
**Call selection**

Finally, when an agent becomes available, the call selection process selects the call that is routed to a free agent. SAP BCM offers the following call selection methods:

- **First-in first-out principle**, in other words, the call that has come in first is served first.
- **Call selection based on priority**. When this method is in use, the call with the highest priority value is allocated to an agent (providing the agent meets the skill requirement).
- **Call picking**. When this mode has been selected, the agent can select any inbound call from the queue.

2) **Routing Outgoing Calls**

When a BCM user calls to an external number, outgoing call routing algorithm routes the call to an appropriate gateway and an appropriate section within the gateway (such as a PRI span).

It is possible to define priorities to the routes (for example gateways and PRI spans). If least-cost routing is used, the system selects the route with the highest (or lowest) priority and sends the call out using that route. Least-cost routing can be used to reduce carrier charges when an outbound call reaches the PSTN.

Another way of providing least-cost routing is by adding prefix numbers before an outgoing call reaches the PSTN in order to select a specified carrier.

With location-based routing rules, the system can select the gateway to be used based on the source number location, IP address or destination number. For example, the location-based call routing can be used when a company has two offices in different cities. Both offices have a gateway, and when someone makes a call, the gateway located at that office is selected automatically.

**IVR and Voicemail Services**

1) **IVR**

SAP BCM Interactive Voice Response (IVR) provides functionality for automated services including voice menus: caller recognition services based on DTMF input, prerecorded voice responses, keypad signal logic, authentication, and voice recording capabilities. The flexibility of BCM IVR enables companies to use one access number, and then collect caller information, route calls, and provide self-service capabilities throughout the organization. BCM IVR efficiently connects customers, clients and partners with your business.

Administrator can define IVR applications and link them to queues. When an IVR application is defined for a queue, the IVR application starts automatically whenever there is an incoming call to the queue number.

IVR application consists of states, which contain logical functions. There can be any number of states in an IVR application. The IVR environment supports several state types. Each state type has its own specific properties and IVR functionalities. The following ones are available:
• Playing a message from a file
• Branching the IVR solution by using a received (one) DTMF digit
• Receiving an arbitrary or static size DTMF digit string
• Recording a message to a file
• Forwarding (blind transfer) the current call to another number (external or internal)
• Starting a callout job in the background to an external number
• Joining the solution-specific queue
• Recognizing the A number of the current call and branching the IVR solution by using a predefined Anumber
• Branching the IVR solution by using a predefined data value list
• Checking the current external data buffer values
• Searching data from either production database (CEM or CPM) or CEM state machine variables
• Writing data to either production database (CEM or CPM) or change the CEM state machine variable
• Calling SOAP method, waiting for an answer
• Branching the IVR solution by predefined schedule conditions
• Calling custom method, waiting for an answer

The above mentioned state types contain various options for modifying the functionality and branching to next states.

2) Voicemail

SAP BCM Voicemail is a complete automatic telephone answering service that can be managed independently of the location through a browser-based user interface, or by using a mobile or traditional phone. The flexibility of BCM Voicemail allows users to create and use specific personal greetings, receive notifications of new messages via SMS or MS Outlook e-mail client, create dictations, manage personal voice mailboxes, and retrieve messages from any location.

With BCM Voicemail, multiple methods for managing the voicemail box and messages are available. Users are able to manage their voicemail box using any DTMF compatible phone or the browser-based user interface from virtually any MS Windows-based PC. In addition, voicemails can be sent as e-mail attachments (.wav files) to a user’s Outlook account. Also for new messages, an SMS notification message can be sent to a mobile phone.

BCM Voicemail enables the use of a private greeting message for any occasion. A default system greeting is also available. The user is able to record multiple greetings for future uses and the number of private greetings is unlimited.

The user can listen to, delete, or change messages from “new” to “old” either from the browser-based user interface or from any phone by calling their own BCM Voice mail number and using IVR prompts.

Using the browser-based user interface, a user can also add a description about a specific
message, save the message as a compressed .wav audio file (approximately 8 MB/60 minutes) for further use, or change the language, password, and new message notification settings.

Directory and Presence Services
Presence indicates user’s availability and willingness to communicate. Presence information enables users to inform other users about their current and future absences, such as meetings, business trips and vacation. In addition, the system uses presence information when making routing decisions. The CRM user interface includes simplified presence indication functionality. The BCM user interface includes a more informative presence system as explained in section 2 to 4.

1) Presence (CRM User Interface)
Communication toolbar (figure 1) in the CRM user interface includes buttons for indicating user availability. The buttons are shown on the right in figure 1. Whenever user has selected the “ready” state and the phone is not busy, the user is considered free and the traffic light indicating presence status of the user is green.

![Figure 2: Communication toolbar](image)

2) Presence
SAP BCM presence information consists of user’s extension number status and user’s activities. The extension number status is the technical status of an extension. For example, the extension is busy if there is an active call.

A user activity is a user-defined time period of a certain activity. Typically activities are absences, such as meetings or business trips. Each activity is linked to a Personal Reachability Services (PRS) profile. Profile determines how incoming calls to the extension are handled. Every user has a default profile which is automatically activated whenever there are no user-defined temporary activity definitions (absences and presences).

a) Managing activities
Users can add, delete and modify their personal activities using the following interfaces:

- CDT soft phone
- MS Outlook Communication Toolbar
- CMC mobile client
- IVR service
- SMS messages

Additionally, SAP BCM directory and availability information can be integrated with third party applications. Such integration is typical, for example, with a corporate intranet so that directory and availability information is available via the intranet.

Administrators can give users rights to manage other users’ activities. Activities can be managed
for one user at a time or for a group of users simultaneously, for example, by selecting a group of
users and adding a meeting for all of them at the same time.

3) Personal Reachability Services
Personal Reachability Services enhances reachability of the users, ensures that as many calls as
possible are answered, and improves the service provided for the callers. On the other hand,
personal reachability services enable users to define when and to whom they want to be
reachable.

For example, let us assume that Denise Smith works in a management consultancy company and
has a deadline for a very important customer presentation approaching. She wants to avoid
answering calls. However, she wants to take calls from her boss as it is always possible that some
important and urgent issues come up. Also, she wants calls from her clients to be answered by a
colleague and any other calls to be answered by the company switchboard. With SAP BCM it is
possible to have the calls handled as described.

With Personal Reachability Services, BCM users can define how they want incoming calls to their
phones handled. Users can choose from several instruction sets (called profiles), which are
predefined by the system administrators. In addition to using the predefined profiles, users can
define customized profiles.

A profile consists of instructions for handling a call in the following situations: user is able to
answer, not able to answer (busy), fail to answer (not answered), and logged out. For each
situation, there is a defined action to be taken. The following actions (profile behaviors) are
available:

- Receiving all calls
- Forwarding calls to voice mail, mobile, switchboard, or to another defined number
- Activating IVR
- Playing busy signal

A profile-related IVR plays the caller defined audio messages. In addition, the callers can be
offered a possibility to select where they want to be forwarded. Up to four forwarding options
can be defined. For example, if the prompt “meeting” and some forwarding options are selected
for a profile, the caller hears: “The person you are calling is in a meeting. Press one to be
forwarded to voice mail, press two to be connected to switchboard”, and so on.

Even if IVR is not selected as profile behavior, a profile can include instructions for playing a
defined prompt to the callers. The prompt can tell, for example, the reason the user is not able
to answer the calls.

Profiles can include “profile exceptions”, in other words, defined numbers needing special
treatment. All inbound calls from the defined exception numbers are treated according to the
exception behavior assigned to them. A profile exception consists of the following information:
4) Directory

SAP BCM provides an internal company directory (in-house) and optional common and personal directories. Directory information includes company and personal contact details, such as titles, job descriptions, substitute and assistant information, as well as plenty of other information related to the company and its personnel. The in-house directory also includes the absence information of the personnel. The in-house directory supports photos, which can be shown next to the contact details.

Typically personnel directory and availability information has been particularly important to switchboard attendants. However, now that the information is available to all corporate users independent of location and terminal, the productivity and effectiveness of an organization can be increased further. The time for tracing colleagues is minimized and unnecessary internal inquiries eliminated reducing the workload of users.

CDT soft phone and CMC mobile users can search and review the presence and availability information of another in-house user and other directory information with their terminals. Other phone users, such as CT Outlook users, IP desk phone users, and 3rd party telephone users, can access the information, for example, via intranet-integrated SAP BCM directory.

Users with corresponding CDT rights are able to modify their own and another user’s directory and absence information using the CDT user interface.

The CDT search engine enables effective searches by using, for example, name, title, company name, location, or phone number. The selected directory entry is immediately available for calling, e-mailing and messaging. Users with special rights, for example, switchboard operators, have additional information fields available for specifying search terms and categories.

Reporting

The purpose of reporting is to provide management information for control, corrective actions, and setting new targets. This applies especially to customer service units, but also to back office teams, divisions, and individual users. The reporting services show how well goals set by management are reached, what causes the results to be different from the goals, and whether the performance level goals are sufficient or unrealistic.

The SAP BCM Reporting application is a dynamic data warehouse for multidimensional OLAP analysis and SQL-based Datamart reporting. The Data Collector component passes information from operative databases to the Reporting Database. The information privacy can be protected with the Data Collector parameters set in the System Administrator application. The actual reporting is carried out using the Microsoft SQL Reporting Services option.
SAP BCM Reporting architecture enables the utilization of external data warehouses for consolidated reports. The architecture opens SAP BCM Reporting for third party report generation and visualization applications (for example, Crystal Reports, MS Reporting Services) by supporting OLAP technology.

SAP BCM provides many predefined reports including contact volumes, service levels, agent statistics, echannel, and task management statistics and personnel presence statistics. New customer specific reports can be defined in the SQL Server Business Intelligence Development Studio software.

The predefined reports include the following:

- Agent-specific performance statistics from the selected time period
- Statistics about contact handling including handling times per queue
- Statistics about each queue’s handled contacts per group/agent including handling times
- Statistics about the distribution of agents’ work time during different states and contact handling times
- Statistics about the service level and handling percentage
- The amount of handled and abandoned contacts during a selected day (or days) in the intervals of waiting time. It also shows the corresponding numbers for contacts answered on time and their relative service levels. With this table you can easily find what is the maximum waiting time that provides you with the desired service level.
- Volume reports with different time intervals: annual, monthly, weekly, daily, hourly, or quarter-hourly reports

1) Interface to SAP BW / Analytics

BCM contact handling statistics are feed up to SAP BW /Analytics through out-of-the-box integration. Example reports are shown in figure 2.
Interface to workforce management systems
SAP BCM software provides standard Web Services, SQL and OLAP interfaces for collecting contact and agent details from the monitoring and reporting database for further processing in Workforce Management Systems.

SAP BCM has tested the following workforce management solutions and found them compatible:

- Teleopti (www.teleopti.com)
- IEX TotalView (www.iex.com)

Monitoring
Online monitoring provides real-time information regarding contact activities. Typically, an online monitoring interface is used in contact centers and help desks where customer contact volumes are high and service levels are the basis for measuring customer service operations performance.

Online Monitoring is a location independent browser based tool. It has three views:

- Summary view provides “current status at glance” with a possibility to drill down to specific statistics.
- Agent statistics view provides details for agent performance, current status and queue login statistics.
- Contact details view displays detailed information about the selected contacts.

Additional Queue watcher tool allows online monitoring users to define threshold values for queues. If threshold value is exceeded, queue watcher view will automatically pop-up and indicate with red color which queue(s) has exceeded threshold value.

1) Summary view

Figure 3 shows Online Monitoring summary view.

![Figure 4: Online Monitoring (summary view)](image)

In the upper part of the window there are service level bars which present call, chat and e-mail statistics graphically. The bars include warning and critical limits for statistics. If a limit is exceeded, the corresponding bar changes color.

Below the statistics bars there is a summary table which shows statistics for the current day, current hour and previous hours compared to selected comparative days. At the bottom there is agent statistic area which shows agents statuses at the current moment as well as current day agent statistics.
The graph area is divided into two different time sections: current situation and current day history.

- Graphs “Calls in queue”, “Queue time longest”, “Queue time Average” and “Outgoing calls” show the current situation.
- Graphs “Talking time average”, “Hang-up time average” and “Abandoned calls” show statistics from the current day history.
- Service level shows statistics from current and previous hours (1-2 hour period)
- Service level cumulative shows statistics from current day history

**Logging and Quality Monitoring**

1) **Call Recording**
   CDT users are able to record phone calls at any point during a conversation (optional service). The recorded audio files are saved in a specified folder on the users’ PC or network file server folder as a compressed .wav audio file (approx. 8MB per 60 minutes).

   In addition, incoming and outgoing calls from CMC powered mobile phones can be recorded. Recording is conducted by establishing conference call between a CMC user, caller/called party, and SAP BCM server. Once conference call is established, SAP BCM server records the call and stores recording to CMC user voicemail box which can send recording as email attachment to CMC user’s e-mail address.

2) **Supervisor Tools**
   The Supervisor tool enables supervisors to perform all the most commonly used functions needed for Contact Center quality control and agent training. The Supervisor tool, shown in figure 4, is additional functionality to the browser based Communication Desktop (CDT) softphone.
The CDT Supervisor can select an agent for more specific monitoring. Agents using CDT softphones are notified once they are monitored and they can also deny supervising via their own CDT user interface. The features of the CDT Supervisor tool incorporate the following:

- Forced assigning/de-assigning agent to queues
- Information regarding current agent call (from, to, duration, etc)
- Silent listening (supervisor can listen to ongoing calls)
- Coaching (only the agent can hear what the Supervisor says)
- Barge-in (3-way call)
- Intercept (disconnect agent from call)
- Hang-up agent call
- Record ongoing call between agent and customer
- Chat with agent using CDT Messenger
- Activate call-back request to agent” [2]

8.2. What is Genesys?
“The mission of Genesys, an Alcatel-Lucent company, is to be the leading supplier of Enterprise software and best practices that enable best-in-class customer service.

Whether it’s managing customer interactions with the contact center, over the Web, or using smartphones, the Genesys software suite dynamically connects customers with the right resources -
self-service or assisted service - to fulfill customer requests, optimize customer care goals, and efficiently use resources.

Genesys software directs more than 100 million customer interactions every day for 4,000 companies and government agencies in 80 countries. These companies and agencies can leverage their entire organization, from the contact center to the back office, to improve the overall customer experience. As a result, Genesys helps stop customer frustration, drive efficiency, and accelerate business innovation.

Genesys continues to innovate and create software solutions that leverage customer investments by being infrastructure-agnostic and that enable rich customer service solutions as a result of an open platform philosophy.” [3]

8.3. What is Avaya?
“Avaya is a global leader in business communications systems. The company provides unified communications, contact centers, data solutions and related services directly and through its channel partners to leading businesses and organizations around the world. Enterprises of all sizes depend on Avaya for state-of-the-art communications that improve efficiency, collaboration, customer service and competitiveness. For more information please visit www.avaya.com.

Avaya’s unique combination of communications applications, software and services helps companies simplify complex communications and integrate with technologies from other vendors, enabling customers to unlock value and potential from their network. By embedding communications into the operations of an enterprise, Avaya helps improve the way organizations work - making people more productive, processes more flexible and customers more satisfied.

Avaya focuses on these major businesses:

Unified Communications
Avaya’s unified communications solutions help companies increase employee productivity, improve customer service and reduce costs by integrating multiple forms of communications, including telephony, e-mail, instant messaging and video all across multivendor networks. With Avaya unified communications, customers can communicate effectively regardless of location or device. Avaya’s open, standards-based UC software and hardware are widely recognized as the most reliable, secure and comprehensive offerings in the industry.

Contact Centers
Avaya is the global leader in the contact center market. Avaya offers highly reliable, scalable communications solutions that improve customer service and help companies compete more effectively.
Avaya’s contact center solutions include intelligent routing, self-service and proactive contact applications that drive effective communications and transactions with customers. In addition, Avaya’s analytics and reporting platform, Avaya IQ, provides companies with detailed customer information that improves profitability and customer retention.
Avaya Global Services
Avaya Global Services evaluates, designs, implements and manages enterprise communications networks for superior business results. Avaya’s consulting and implementation services are backed by approximately 7,000 employees worldwide; 34 global delivery support centers; and unique, patented design and management tools.

Small & Medium Enterprise Communications
Avaya’s Small and Medium Enterprise Communications unit is focused on enterprises with up to 250 employees. The company offers complete solutions that bring together telephony, messaging, networking, conferencing, and customer management designed for the requirements of small and medium enterprises. The products and services are sold primarily through Avaya’s global channel partners.

Data Networking
Avaya’s Data Networking portfolio offers the reliable, secure, end-to-end solutions needed to fully use real-time communications, delivering world-class performance and superior return on investment. Avaya’s diverse data portfolio is committed to delivering innovative technology, energy-efficient hardware, and improving the effectiveness of business by creating a simpler and more effective network. Organizations should never be constrained by their networks, and Avaya’s proven data solutions ensure the network is accepted and valued as a genuine real-time communications enabler.” [4]

9. What are the differences between SAP BCM, Genesys and Avaya (focused on the integration with SAP CRM 7.0)?

The ICI protocol provides the capabilities of the CMS. In the ICI protocol is defined what the possibilities and impossibilities of the CMS are, this results in a minimum of differences between SAP BCM, Genesys and Avaya. Accordingly the only differences between SAP BCM, Avaya and Genesys for example are (purchase) costs, support and brand awareness.

Further information about the differences between these software packages and in what situation (for which customer) SAP BCM, Genesys or Avaya the best option is, have been described in chapter 9.
9.1. SAP BCM

9.1.1. For which customers and what kind of customers?

“SAP Business Communications Management software enables companies to improve contact center effectiveness and reduce costs through an all-software, IP-based communications solution. With the system, you can easily integrate communications directly into your business processes and applications, reducing needless delays and improving the efficiency of your customer service.

Whether customers contact your company via phone, e-mail, chat, text message, or fax, SAP Business Communications Management routes the contact to the person in your organization - whether in the office or working remotely - who is best qualified to help the customer. By eliminating the need for costly and cumbersome hardware-based communications systems, SAP Business Communications Management can help reduce your total cost of ownership.

With SAP Business Communications Management software, your organization can:

- Improve resource coordination and performance - With SAP Business Communications Management, you can more easily leverage the expertise of resources throughout your organization and monitor your customer-facing operations in real time, resulting in significant improvements to internal performance across multiple locations and communications channels.
- Increase customer satisfaction - By automatically routing all customer contacts to the most qualified employee available and providing the customer-facing employees with access to customer-related information, SAP Business Communications Management helps you to decrease waiting times for customers and improve the first-time resolution rate.
- Lower total cost of ownership - By reducing hardware investments and offering more targeted and flexible use of software, SAP Business Communications Management helps reduce TCO.
Lower installation, integration, and maintenance costs - SAP Business Communications Management offers prebuilt integration with the SAP Customer Relationship Management application - resulting in lower installation, integration, and maintenance costs.” [5]

9.1.2. What is the position relative to other CMS packages?

Figure 7: Magic Quadrant for Contact Center Infrastructure, Worldwide

Evaluation Criteria

“Ability to Execute

Gartner evaluates contact center infrastructure providers on the quality and efficacy of the processes, systems, methods and procedures that enable contact center performance to be competitive, efficient and effective and to positively affect revenue, retention and reputation. Ultimately, they are judged on their ability to capitalize on their vision.

- Product/Service: Core goods and services offered by vendors that compete in and serve the defined market. This includes current product and service capabilities, quality, feature sets and skills, whether offered natively or through OEM agreements and partnerships.
- Overall Viability (Business Unit, Financial, Strategy and Organization): This includes an assessment of the organization’s financial health overall, the financial and practical success of the business unit and the likelihood of the business unit continuing to invest in the product, offer the product and advance state of the art practices in the organization’s product portfolio.
- Sales Execution/Pricing: The vendor or channel capabilities in all presales activities and the structure that supports them, which includes deal management, pricing and negotiation, presales support and the overall effectiveness of the sales channel.
- Market Responsiveness and Track Record: The ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customers' needs
evolve and market dynamics change. This criterion also considers a vendor’s history of responsiveness.

- **Marketing Execution:** The clarity, quality, creativity and efficacy of programs designed to deliver the organization’s message to influence the market, promote the brand and business, increase awareness of products, and establish a positive identification with the product/brand and organization in the minds of buyers. This “mind share” can be driven by a combination of publicity, promotions, thought leadership, word of mouth and sales activities.

- **Customer Experience:** Relationships, products and services/programs that enable clients to be successful with the products evaluated. This includes the ways customers receive technical or account support and can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups and service-level agreements.

- **Operations:** The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure, such as skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

### Evaluation Criteria

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Weighting</th>
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<tbody>
<tr>
<td>Product/Service</td>
<td>high</td>
</tr>
<tr>
<td>Overall Viability (Business Unit, Financial, Strategy, Organization)</td>
<td>high</td>
</tr>
<tr>
<td>Sales Execution/Pricing</td>
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<tr>
<td>Market Responsiveness and Track Record</td>
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<td>Marketing Execution</td>
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<td>Customer Experience</td>
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<tr>
<td>Operations</td>
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**Table 1: Ability to Execute Evaluation Criteria**

#### Completeness of Vision

Gartner evaluates contact center infrastructure providers on their ability to articulate logical statements about the market’s current and future direction, innovation, customer needs and competitive forces, and on how well this corresponds to Gartner’s position. Ultimately, vendors are rated on their understanding of how market forces can be exploited to create opportunities for them and their clients.

- **Market Understanding:** A vendor’s ability to understand buyers' wants and needs and to translate that understanding into products and services. Vendors that show the highest degree of vision listen to and understand buyers’ wants and needs and can shape or enhance them with their added vision.

- **Marketing Strategy:** A clear, differentiated set of messages communicated consistently throughout the organization and externalized through a website, advertising, customer programs and positioning statements.

- **Sales Strategy:** The strategy for selling products that uses an appropriate network of direct and indirect sales, marketing, service and communication affiliates to extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.
• **Offering (Product) Strategy**: A vendor’s approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature sets as they map to requirements.

• **Business Model**: The soundness of the vendor’s underlying business proposition.

• **Vertical/Industry Strategy**: A vendor’s strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including vertical markets.

• **Innovation**: Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or preemptive purposes.

• **Geographic Strategy**: A vendor’s strategy to direct resources, skills and offerings to meet the specific needs of geographic locations outside its native (“home”) location, either directly or through partners, channels and subsidiaries as appropriate for that location and market.

<table>
<thead>
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<th>Evaluation Criteria</th>
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<tr>
<td>Market Understanding</td>
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<td>Innovation</td>
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<tr>
<td>Geographic Strategy</td>
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Table 2: Completeness of Vision Evaluation Criteria

**Leaders**

Leaders are high-viability vendors with broad portfolios, significant market shares, broad geographic coverage, a clear vision of how contact center needs will evolve and a proven track record of delivering contact center products. They are well-positioned with their current product portfolio and likely to continue delivering leading products. Leaders do not necessarily offer a best-of-breed solution for every customer requirement. However, overall, their products are strong and often have some exceptional capabilities. Additionally, these vendors provide solutions that present relatively low risk.

**Challengers**

Challengers are vendors with strong market capabilities and good solutions for specific markets. However, overall, their products lack the breadth and depth of those of the Leaders. Challengers do not always communicate a clear vision of how the contact center market is evolving and they are often less innovative or advanced than the Leaders. Vendors in this quadrant often excel at selling contact center functionality to their installed base of PBXs.

**Visionaries**

Visionaries demonstrate a clear understanding of the contact center market and provide key innovations that point to the market’s future. However, these vendors typically lack the ability to influence a large portion of the market, have not yet expanded their sales and support capabilities on a regional basis, or do not yet have the funding to execute with the same capabilities as the Leaders.
Niche Players

The vendors in this quadrant offer contact center products that focus on a segment of the market or a subset of its functionality. Customers aligned with the focus of a Niche Player may find its offerings to be a good “fit” for their needs.” [6]

9.1.3. What are Accenture’s competitors in the field of BCM?

“Service Partners focus on strategic consulting, implementation, systems integration and continuous improvement of business processes to SAP users. They operate at different levels: from boardroom adviser to the Project Manager, from functional specialist to ABAP programmer.

The current partners of SAP in the Netherlands provide major specializations and capacity needs.” [7]

<table>
<thead>
<tr>
<th>AEPEX Business Consultants</th>
<th>Genpact</th>
<th>Ordina</th>
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<tr>
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<td>Dimensys</td>
<td>NorthgateArinso</td>
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</table>

Table 3: Current partners of SAP Netherlands

9.1.4. What is the vision of SAP BCM?

SAP

“Differentiate your company with customer service

One of the most effective ways for a business in any industry to achieve a competitive advantage is by offering its customers superior service. But how can businesses provide today’s customers with the speedy, reliable, and consistent customer service – delivered through multiple contact channels – that they demand?

SAP Business Communications Management software can help by enabling you to fully leveraging the expertise of the staff within your organization to fulfill customer expectations.

Deliver a Great Customer Experience Through Multiple Contact Channels

SAP Business Communications Management provides an advanced, all-IP communication solution for multichannel contact centers and contact-intensive, multisite organizations. It replaces traditional communications systems hardware with a software-based IP telephony solution that can help make your staff’s interactions with customers and partners more effective.

Intelligent routing ensures that customers reach the right people within your organization - people with the skills to best address the customers’ needs. Plus, unified queuing, prioritizing, and routing of all contacts, no matter their format - telephone, e-mail, fax, voicemail, text messaging, and the Web - ensures that your users have a smooth, consistent experience.
With SAP Business Communications Management, you can:

- Manage your organizational resources across functions and locations and better leverage organizational know-how
- Give your customers a smooth, consistent experience across all avenues of contact, including voice, e-mail, chat, text messaging, and fax
- Reduce your total cost of ownership

Integrate Communications with Your Business Processes
SAP Business Communications Management allows you to integrate communications technologies and business systems, helping you to create communication-enabled business processes that enhance your marketing, sales, and service activities.

By better leveraging the expertise throughout your organization and monitoring your customer-facing operations in real time, you can significantly improve your internal performance across multiple locations and communications channels.

For additional value, SAP Business Communications Management is preconfigured to integrate with the interaction center functionality of the SAP Customer Relationship Management (SAP CRM) application. For example, a company can use the data in SAP CRM to identify a specific customer and route the customer’s incoming contacts to the right employee – all without requiring any up-front complex or time-consuming integration work. “[8]

Gartner
“Consider SAP Business Communications Management (SAP BCM) when looking for highly-scalable and/or multitenant all-in-one application suites solutions, especially when your organization is committed to SAP enterprise applications.

Strengths
- SAP BCM is an all-in-one software suite that includes multichannel inbound, outbound, IVR, call-recording and quality-monitoring capabilities, and strong integration with mobile devices.
- BCM can be run as a stand-alone solution or integrated with other SAP enterprise software products and supports interoperability with PBX and IP-PBX infrastructure from leading vendors.
- SAP is integrating the communication functions inherent in its contact center offering into its broader set of enterprise applications to create a unified-communications-style offering.
- BCM is gaining market acceptance beyond its traditional stronghold in Scandinavian countries, increasing SAP’s ability and experience in supporting the solution for global customers.

Cautions
- BCM represents a very small portion of SAP’s overall revenue stream and it continues to be challenging for the BCM sales and marketing team to gain and maintain awareness among SAP’s sales force to mine the large and lucrative SAP enterprise software customer base more easily. This will make it harder for the BCM group to grow the business and show the financial contributions that will gain it more access to SAP’s R&D budgets.
BCM lacks brand awareness in the contact center infrastructure space, making it more challenging to penetrate enterprises that do not have an existing SAP investment. This further challenges the BCM group within SAP to grow the business in a way that will accelerate SAP's investment in growing that portion of the business.

In many customer environments, purchasing decisions for contact center infrastructure and enterprise applications software are made by separate groups – particularly in large enterprises. This can increase the complexity of the selling environment within accounts and limit the long-term benefits of SAP's integrated solution.” [6]

Accenture

“SAP Business Communications Management (SAP BCM) provides a flexible multi-channel, all-IP business communications platform with out-of-the box integration to business applications like SAP Customer Relationship Management (CRM) and SAP ERP. SAP BCM integrates physically distributed resources and know-how into a single manageable virtual operation.

Whether customers choose voice, e-mail, chat, text messaging or fax to interact with a company, the software will find the right person in the organization with the right skills whether they are in the office, at home, or on the road. All without costly and cumbersome hardware-based communications systems, significantly reducing total cost of ownership.

SAP BCM enables companies to dramatically improve contact center and communication-enabled business process effectiveness and reduce costs. Customer benefits of the SAP BCM include:

- Better service to customers
- Improved internal performance
- Lower system TCO

In addition to providing a communications platform for contact centers, SAP BCM can provide telephony and communications facilities for the following types of users: back office workers, mobile workers, branch offices and remote workers. SAP BCM can be used also as a stand-alone solution to implement any combination of the following business communications applications: inbound contact center, outbound contact center, mobile contact center and personal telephony.

SAP BCM is a software application that runs on standard servers and is based on VoIP technology. With these technology choices SAP BCM is a flexible and cost-effective communications solution.” [9]

9.1.5. What are the integration capabilities?

SAP CRM

“CRM issues can often be traced to ineffective business processes that involve human communication. Companies can overcome the limitations inherent in those marketing, sales, and service processes by pursuing communication-enabled business processes (CEBPs) – processes enabled by communication systems that are tightly integrated with business applications.
SAP Business Communications Management (BCM) is off-the-shelf integrated with SAP CRM. The integrated solution provides complete delivery channel for service, sales and marketing efforts. In addition the communications solution can be extended to the broader enterprise beyond CRM users to enable subject-matter experts within the organization to participate in contact handling.

In the integration scenario, BCM provides advanced communication platform with efficient multi-channel contact routing, Interactive Voice Response (IVR) services, personnel directory and presence services, online monitoring and reporting for contact management and voice logging services. SAP CRM and Interaction Center functions are used for account and transaction management such as order intake and service ticket management, activity management, outbound campaigns, etc. Figure 6 illustrates the main roles of BCM and CRM in the integrated system.

With BCM - CRM integration, agents can handle customer interactions (e.g. calls, e-mails and chat) and customer issues /transactions with a single user interface. Customer information is automatically retrieved from CRM database based on caller number or email address. The information is presented in the CRM agent desktop before answering. CRM information and functionality is fully available during the call. After the call agent can report contact issues and statistics to CRM for further actions.

From the CRM user’s point of view, BCM – CRM integration means the following:

- **Interaction Center toolbar includes buttons for call, e-mail and chat contact handling.**
- **Incoming calls, e-mails and chat requests are automatically routed and offered to the Interaction Center agents based on defined routing rules on BCM side.**
- **CRM sales, marketing and service user interface includes controls for call handling.**
- **Account information is retrieved automatically based on calling number or e-mail address.**
- **Action item routing enables action items to be routed in real-time for immediate action.**
- **When a call is transferred, the related business context can be transferred along with the call.**
- **Presence / availability of other users and queues can be seen in the CRM user interface.**
- **BCM softphone (CDT) is available for advanced call handling functionality such as real time queue status views, queue login management, directory and presence services and supervisor functionality.**
This document describes the functionality of SAP BCM version 6.0 when integrated with SAP CRM 7.0. If earlier program versions are used, only a subset of the functionality is available as shown in table 5.

<table>
<thead>
<tr>
<th>Functionality</th>
<th>BCM 5.5 SR1 and CRM 4.0 Service Industry Extension – CRM 7.0</th>
<th>BCM 6.0 and CRM 4.0 Service Industry Extension – CRM 5.0</th>
<th>BCM 6.0 and CRM 5.1 -- CRM2007</th>
<th>BCM 8.0 and CRM 7.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inbound call handling</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Email handling</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>CRM CB click-to-call</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Context transfer</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Chat handling</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>ERMS support</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Communication enable</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contextual presence</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Action item routing</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Subsets of functionalities

E-mail handling, chat handling and ERMS support are only available for CRM Interaction Center, not for the other CRM roles.” [10]

SAP ERP

“With SAP solutions, you can quickly and cost effectively integrate your company’s headquarters, subsidiaries, divisions, and third-party partners into a single and coordinated operation.

If your headquarters is running SAP Business Suite or any other ERP solution, you can connect systems and business processes across your extended enterprise by selecting from our portfolio of business management solutions and business performance and analytics solutions, as well as leveraging the SAP Best Practices for Business Network Integration.

Business Management Solutions

- **SAP Business One** - A single integrated solution offering all the essential business functions; ideal for smaller sales, service, and distribution offices.
- **SAP Business ByDesign** - A complete and integrated on-demand solution, offering broad functional capabilities; ideal for small and midsized high growth companies.
- **SAP Business All-in-One** - A comprehensive, integrated, and highly scalable industry solution; ideal for more complex manufacturing, sales, and service sites for midsize or fast-growing small companies.” [11]

Oracle/Siebel

“Siebel is database agnostic (you don’t write SQL in a Siebel application) and supports the following database platforms only:

- Oracle
- SQL Server
9.1.6. Who are (Accenture) customers who already use SAP BCM?

Atos Origin
Industry: Professional services - IT and BPO services
Revenue: €5.8 billion
Employees: 50,000
Headquarters: Paris
Web site: www.atosorigin.com

Chinatrust (Philippines) Commercial Bank
Industry: Banking
Revenue: P 1.795 billion\(^5\) (US$41 million)
Employees: 5242\(^6\)
Headquarters: Bonifacio Global City, Taguig City, Philippines
Web site: www.chinatrust.com.ph

DB Dialog Telefonservice
Industry: Professional services
Revenue: €45 million (2007)
Employees: 1,800
Headquarters: Berlin
Web site: www.db-dialog.de

Kayzerigaz Natural Gas Distribution Marketing and Trade Co.
Industry: Utilities
Revenue: -
Employees: 165
Headquarters: Kayseri, Turkey
Web site: www.kayserigaz.com.tr

Yaskawa America
Industry: Industrial machinery and components
Revenue: US$295 million
Employees: 480
Headquarters: Waukegan, Illinois
Web site: www.yaskawaamerica.com

9.1.7. What are the Accenture projects with SAP BCM?

There are currently no Accenture projects with SAP BCM found.

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\(^5\) Unaudited revenue.
\(^6\) As of end of October 2010.
9.2. What are the possibilities (scenarios) in SAP CRM 7.0?

Agent Logs on to the Contact Center

“In order to be granted access to contact center services, an agent generally needs to log on to the contact center and needs to specify channels for his/her work (telephony, email, ..). The Integrated Communication Interface defines methods which can be used for these purposes, but at the same time allows for the agent to use other means (telephone device, etc) for them.

In terms of the Integrated Communication Interface, the agent workmode holds the information as to whether or not the agent is logged on to the contact center. Accordingly, an agent who is not logged on, is in workmode “Logged off” and, if logging on is executed via the Integrated Communication Interface, the agent logs on to the contact center by setting his/her workmode to one of the other values.

No logon user id and password combination will be transferred when setting the workmode to any one of the “logged on” or “logged off” values. These commands are always issued by the user whose user id is specified in the SOAP message header. By virtue of the user authentication implemented within the SAP system together with the security mechanism used for the data transfer between SAP and the external system, an additional user id and password authentication in the contact center should not be required.

After setting the workmode to one of the “logged on” values, the agent may have one or more channels already switched on for his/her work (for example those that were switched on when he/she last logged off – this depends on how the contact center works).

The agent may request the contact center to provide information on the “User Attributes” (workmode, current channels, etc).

Depending on which channels are already switched on for the agent, he/she may explicitly specify the channels for which he/she makes himself/herself available.

Also, if queues are part of the agent’s work environment, he/she may explicitly specify the queues which he/she wants to log on to.

Note on Free Seating

Please note: Free Seating is only available in CRM from release 4.1 and onwards.

Up to version 3.01 of ICI, a static association was presumed between the SAP system user and a given workplace. In other words, the agent was supposed to work always at the same workplace, i.e. with the same telephone extension and the same computer. The new Free Seating functions allow an SAP system to exchange data about contact center workplaces with a contact center system and to report assignment of agents to workplaces. These functions allow SAP applications to query what workplace assignment mode the contact center supports, to report to the contact center system a location of the agent, and to query the contact center for the list of workplaces available for the agent.
The changes introduced in the ICI interface are compatible to the previous versions of the interface as only new functionalities are added and existing ones remain intact. Contact centers not supporting the new version of the interface will be compatible to SAP applications, but free seating will not be available (an error “Unknown SOAP message” will be returned by the contact center).

Agent Receives an Incoming Phone Call
In order to receive events signaling incoming phone calls (from one of the contact center queues), the agent must be logged on, must have his/her workmode set to “Logged on - ready” and must have subscribed to events associated with his/her phone line.

In case of an incoming phone call being assigned to some agent by the contact center, the contact center should now send a “Change Event” SOAP message to the mySAP CRM server (not directly to the agent’s front end), which will take care of displaying that information on the agent’s front end.

An incoming phone call being assigned to the agent does not change the agent’s workmode (which remains set to “Logged on - ready”). The fact that the agent is now or will be very soon busy handling a phone call is reflected exclusively by the item’s (here: the phone call’s) processing status and the item being assigned to the agent.

The agent now has to decide whether to accept the incoming call or to deflect it (either decision resulting in the appropriate SOAP message being sent to the contact center). If no action is taken (and therefore no SOAP message sent to the contact center), the contact center should re-route the call to another agent.

As a result of the agent’s accepting or deflecting the incoming phone call, the status of the phone call will change, and this change is also to be signaled to AP by Change Event SOAP messages.

Agent Initiates an Outbound Call
In order to initiate outbound phone calls from the Interaction Center WebClient, the agent must be logged on and must have his/her workmode set to “Logged on - ready”.

Additionally, in order to receive events signaling status changes of phone calls he/she initiated, he/she must have subscribed to events associated with his/her phone line. At the ICI level, the first step in the process of initiating a call, is to create a phone call object. Only in the next step the number to be dialed will be passed on to the contact center. The contact center should then send call status change events to SAP, according to the process, executed by the PBX, of establishing the call.

If the agent ends the call, this is signaled to the contact center by a drop call command. The contact center is assumed to send a call status change event (status=disconnected) to SAP. If the remote party ends the call (or if the call gets disconnected for some other reason), this change event must be sent to SAP, too.
Email Scenarios
The email part of the Integrated Communication Interface is based on the assumption that “typical” email services such as inbox and outbox services, including access to the SMTP network, are provided by the external contact center.

Simple scenarios which show how agents access these services are described in the ICI Test Cases document.

Chat Scenarios
The chat part of the Integrated Communication Interface is based on the assumption that “typical” chat services such as network access and data exchange with remote chat partners, are provided by the external contact center.

Simple scenarios which show how agents access these services are described in the ICI Test Cases document.

Supervisor Monitors Selected Queues
In order to be able to receive monitoring data, the supervisor must be logged on and must have subscribed to events associated with the queues he/she is interested in.

As a preliminary step, before actually subscribing to these events, the supervisor may request the monitoring catalog and, additionally, request the instances (here: the queues he/she is interested in).

In subscribing to queue events, the supervisor specifies the phone lines - assuming the queues are “phone queues” - he/she is interested in as well as the “key figures” (i.e. type of information he/she wants to receive, such as number of active calls, etc). These key figures must be chosen from the monitoring catalog (whether or not the catalog had been requested in the preliminary step), i.e. the supervisor can only select key figures that are supported by the contact center.

Recovery
Recovery of communication channels is necessary when application finished unexpectedly due to hardware failure, software failure or power outage. Also the recovery has to take place when an agent closes the application having in his/her workspace unfinished items like active phone calls, chat sessions or e-mails in different states.

The Integrated Communication Interface provides methods allowing the SAP application to recover items left in an active status at the contact center side. Those methods are:

- IciPhoneLine_getCalls
- IciFolder_getMessages
- IciChatLine_getSessions” [13]
10. In what situation (for which customer) is SAP BCM, Genesys or Avaya the best option?

In this chapter is described case 1: what is the best option in this situation (SAP BCM)?, case 2: what is the best option in this situation (Genesys)? and case 3: what is the best option in this situation (Avaya)?

10.1. Case 1: what is the best option in this situation (SAP BCM)?

“Global companies want global support and a consistent customer experience worldwide. That’s why Atos Origin S.A. chose SAP® Business Communications Management software to manage voice and e-mail support requests from clients around the world. “When we evaluated contact center solutions, SAP Business Communications Management was the only one proven to work globally,” says Loek van Stekelenburg, contract manager of global managed operations at Paris-based Atos Origin.

SAP Business Communications Management anchors a global IP-telephony help desk that provides PC support spanning 8 countries; once the rollout is complete, service will be available throughout 18 countries. After customers calling for support get the welcome greeting, they then select their language preference and choose a question type from a menu. The callers are routed automatically to a service agent where the contact center personnel will speak their language - and, if necessary, the agents will even log into the customers’ systems to resolve issues.

Agents can access a knowledge database in 12 languages for answers to commonly asked questions. If the agents cannot resolve the issue, a search function helps them find someone in the network with more expertise, determine if they’re available, and forward the call. Agents can also contact managers who will join the conversation if requested. Managers and agents can confer without the customer hearing them.

“The agent in Kuala Lumpur, Malaysia, and the agent in Bydgoszcz, Poland, both have the same system and share the same information about the global contract,” says van Stekelenburg. “They can see immediately who the user is, independent of the country where the help desk resides. The procedures are the same wherever you are. Every customer is handled and treated in the same way, all over the globe.”

Beyond the benefit of customer satisfaction, Atos Origin expects to realize a substantial cost savings. Says van Stekelenburg, “We are moving to a single solution from multiple systems running locally, so we no longer need a PBX system in each country. This brings downs cost on a per-call basis. Our aim is to substantially reduce our costs per call at our most expensive locations - in some cases up to 75% and once we achieve that, improve it even further. The objective is to reduce help-desk infrastructure costs to a very low level.”

Atos Origin has also increased agent productivity, lowered internal support costs, and gained resource flexibility. “We have increased the number of calls taken by agents,” van Stekelenburg says. “We are running SAP Business Communications Management globally with two people, versus local IT competency teams in each country. We can upgrade once and distribute a new version worldwide. We can connect more countries without increasing support. We can easily route calls to countries...
where we have lower-cost agents and connect external agents to the system for flexible reserve capacity. Financially, there are a lot of benefits if you use a single system all over the world.”

Eleven Million Calls and E-Mails Annually
When van Stekelenburg says all over the world, he means it. In the first month after Atos Origin rolled out the multichannel customer interface and telephony platform, 230 agents handled 30,000 calls and 20,000 e-mails for 32 client companies. Within seven months, Atos Origin expects 750 agents will field 240,000 calls and 180,000 e-mails. In 18 months, the anticipated figure is 11 million calls and e-mails per year.

That global reach - and the ability to provide 24x7 customer support - is the reason Atos Origin chose SAP Business Communications Management. “One attribute of being a global company is having the same way of working all over the globe,” van Stekelenburg says. “Our help desk and job ticketing system are the same everywhere. Our global customers like what we are doing with SAP Business Communications Management.”

Atos Origin managers like it too. For monitoring, evaluation, and training purposes they can listen in on conversations, either unknown to the agent, known to the agent, or known to both the agent and customer. They also get good analytics.

“SAP Business Communications Management records and stores all events that take place in the system,” van Stekelenburg says. “Standard reports are supplied automatically - call and e-mail volumes, how many inquiries are answered within so many seconds, and so on. We report on compliance with service-level agreements and agent productivity. These reports integrate information from voice and e-mail. SAP Business Communications Management was the only solution that integrated voice and e-mail in the same database. You can create a single report with all the call, e-mail, and fax information. We really loved this about the software - the e-mail integration is very well done. We also use business intelligence software from Business Objects, an SAP company, to create customized reports for managers.”

Two-Day Application Install
The SAP Business Communications Management implementation was quick. “We installed the software in two days,” van Stekelenburg says. “The most difficult part of implementing the global solution was setting up a voice-quality IP network.” It took two to three weeks to get the interactive voice responses (IVRs) set up. “There was also a lot of testing,” adds van Stekelenburg. “With all that, the overall project took six weeks and came in within budget.”

SAP helped. Says van Stekelenburg, “We had on-site support from an SAP specialist for four days; we also had SAP support from an R & D team in Finland with a very good technical understanding of the system. A week before going live we had 25 issues left. With the assistance of SAP, every issue was resolved within three days.”

SAP Business Communications Management is installed centrally in Amsterdam and runs locally in Houston, Sao Paulo, Utrecht (The Netherlands), Bydgoszcz, Daumesnil (France), Kuala Lumpur, and Madrid and Tenerife (Spain). “Customers call a local number and make their choices,” says van
Stekelenburg. “The interactive voice responses automate voice replies to customer inquiries and gather information for routing the inquiries. The IVRs are established up front with the customer and can be modified at any time, in 5 to 10 minutes.”

Customers are then routed to the appropriate service agent. If Atos Origin identifies a company-wide issue - for example, if a customer e-mail server is down - it can place a message in a location the customer specifies, so a caller knows immediately that the problem is being addressed.

“Initially, 95% of the support requests are voice calls and 5% are e-mail,” van Stekelenburg says. “E-mails are addressed right away; they are treated the same as calls. We store standard answers to recurring questions in a knowledge database that is shared by agents around the world. Most e-mails are answered within minutes. Once customers see this, they tend to rely more on e-mail. In fact, the percentage of contacts via e-mail per customer rises to about 45% in a couple of months.”

**Next Phase: 10 More Countries**

Atos Origin next plans to roll out SAP Business Communications Management to 10 more countries. The company wants to link the software with customer relationship management software to support outbound calling for sales and marketing campaigns. Atos Origin also plans to integrate SAP Business Communications Management with job ticketing. Says van Stekelenburg, “Currently, when a call comes in, the agent has to create the ticket. We want to streamline the data entry process using the customer identification information we already have in SAP Business Communications Management to automatically complete the ticket.”

Another Atos Origin priority is to link additional external agents into the network - to give the company more scheduling flexibility while helping to hold down fixed costs. “There are more issues first thing in the morning and right after lunch when many users log in - a forgotten password, a frozen screen, and so on,” van Stekelenburg says. “There can also be large companywide disturbances. To cope with these, you need a lot of agents for a few hours. We are hiring external agents who can log into the system at home and use their own phones. We can switch on these agents quite easily. They just need a PC and a secure voice-quality Internet connection to our network.”

**A Consistent Face to Customers**

The beauty of SAP Business Communications Management, says van Stekelenburg, is that Atos Origin can achieve that flexibility yet still put forth a single face to global clients. “With the opportunity for manager assistance and a shared knowledge base of best responses and practices, SAP Business Communications Management helps us provide our customers with a consistent experience. We are able to quickly train agents, continuously evaluate them, and mentor their skills and capabilities.”

Sometimes global networks work in interesting ways. “A client called in from Chicago, and because nobody in the United States was available, the call was redirected to Utrecht,” van Stekelenburg says. “The funny part was, he was a Dutch guy, so we could conduct the conversation in Dutch. This was pure coincidence, because he selected the English language.” The help desk agent quickly fixed the customer’s problem.
“This gives you some sense of how vast and how valuable a global network and global solution truly is,” van Stekelenburg says.” [14]

10.2. Case 2: what is the best option in this situation (Genesys)?

“On 1 October 2006 water companies Hydron Midden-Nederland, Hydron Flevoland and Vitens merged. The new company supplies drinking water to 5.4 million domestic and industrial users in Flevoland, Friesland, Gelderland, Midden-Nederland, Overijssel and a number of towns in Drenthe and Noord-Holland. This makes Vitens the largest water company in the Netherlands.

“We expect three to four players to remain in the water market in the end. To be prepared for this as well as possible, you need to have a strong and solid organization,” according to Jennifer Rietveld, Manager Customers at Vitens. “That is why we pay a lot of attention to further professionalization of our organization and our customer friendliness and focus. If you’re good to your customers, it’s good for the company.”

With an interactive Web site and customer contact center, Vitens makes sure customers can contact them easily and are helped quickly. The company’s contact centers handle over 10,000 customer interactions every week.

Challenges

Previously, Vitens used custom-built systems for both its customer service and customer relationship management (CRM) systems. However, the systems were difficult to manage and did not keep pace with Vitens rapid growth.

The company decided to upgrade its CRM software and also took a closer look at their overall customer service strategy. Vitens commissioned Accenture to select and implement a new CRM system for the company. Working together with Accenture, Vitens selected SAP’s CRM software for the job.

During the process, Accenture advised Vitens that their existing contact center software was not suitable to support their long-term customer service goals.

“We also took the opportunity to think about our customer service strategy,” explains Rietveld. “It was a real moment of reflection: how do we want to treat our customers? How do we do it now and why? Can we increase the efficiency and effectiveness and at the same time improve the customer experience?”

To align with Vitens customer service goals, the new solution had to support customer contacts across multiple channels, it had to be scalable and provide complete integration with SAP’s CRM system for a full-view of all customer interactions. After reviewing several options, Genesys became the preferred choice.

Solutions

Today, Vitens uses Genesys Enterprise Routing, Genesys Workforce Management, Genesys Voice Portal and the Genesys Gplus Adapter for SAP. A major advantage of Genesys is that the software
does not function in separate ‘silos’ as before, but are completely integrated with each other and with the SAP software. Thanks to Genesys Enterprise Routing, customers are immediately routed to the most suitable contact center agent depending upon their request. Furthermore, Vitens can now use experts outside the contact center in the event a customer calls with a question that requires more in-depth knowledge. Agents can route them to a specialist in the backoffice based upon business rules that have been created in the Genesys Enterprise Routing solution. They indicate to the agent which types of calls should be routed outside the contact center and which particular specialist to send the inquiry to.

The company has divided their contact center agents into four levels based on skill set. Level 1 agents handle simple matters, such as processing moves, answering general inquiries or questions about ‘Water for Life’, an initiative sponsored by Vitens, which transfers its knowledge as well as experience to local water companies in developing countries. Level 2 agents answer questions about company memos while level 3 agents handle service problems and can call in mechanics when necessary. Fourth level agents are expert level and able to answer questions that require in-depth knowledge. These agents may be located in either the contact center or the back office.

Vitens uses speech recognition to identify calling customers. When customers call the company, they say their postal code and house number via the self-service platform.

The Genesys Voice Platform retrieves the correct customer details and history from the SAP CRM system. When the customer is routed to a contact center agent, they already have the customer’s full profile, which expedites service.

To manage peak and off-peak call periods, Vitens uses the Genesys Workforce Management solution. This allows Vitens to plan the staffing levels required in the contact center based on historic and current information about customer interactions.

Vitens opted for a phased implementation strategy beginning first with Genesys Enterprise Routing followed by Genesys Workforce Management. Vitens plans to evolve to a multichannel strategy, whereby contact center agents can handle both e-mail and written correspondence. However, because the introduction of the SAP CRM system impacts the organization across a number of areas, Vitens decided to concentrate on the telephone channel first.

According to Rietveld, the implementation of the Genesys Gplus Adapter with SAP CRM system went smoothly. Genesys Gplus Adapter ensures the correct customer details are presented when a customer is routed to an agent. The Genesys Gplus Adapter accelerates and simplifies the integration of Genesys software with market leading CRM applications to provide a complete view of the customer and all previous interactions they’ve had with the company. The integration between Genesys and SAP has been configured to seamlessly match Vitens business processes.

Results
“The best customer experience is when a customer does not have to wait too long when he or she calls, and - more importantly - is expertly helped by a friendly employee. A customer needs to hang up feeling, ‘What a pleasant company’,” says Rietveld.
Vitens applies different objectives to monitor the quality of its customer service. For example, 80 percent of calls received must be answered within 20 seconds. Customer e-mails must be answered within two days and all complaints must be resolved within five days. Customer satisfaction ratings must be 8 or better. Vitens monitors these quality standards every month and has noticed a clear improvement since the implementation of Genesys.

With Genesys, 85 percent of all calls are now answered within 20 seconds, which is a 45 percent improvement.

“Our customers are very positive about the improved routing. They are now routed to the person who is in the best position to help them with their question,” explains Rietveld.

“The implementation of Genesys also gave us a much better understanding of the skill levels of our agents. It soon became clear that we had too many people on level 1 and not enough on level 2. We then trained more employees for the second level, so that the staffing of the contact center is more in line with the kinds of questions asked.”

Genesys Product Suite Genesys provides an open system platform designed to integrate with more hardware and software applications than any other leading contact center software company.

“We attach great importance to personal contact with our customers. The less barriers in between, the better,” continues Rietveld. “We therefore deliberately chose to use speech recognition to further optimize that personal contact. Customers are able to say their postal code and house number and Genesys ensures the correct customer details are shown on the agent’s screen. This is better than having to type in all kinds of data and ensures our agents are able to help customers better and faster.”

In the long term Vitens also wants to set up outbound calling, for telephone payment reminders and service calls. For now, the company is concentrating on improved workflows and implementing multi-channel strategies. Vitens also plans to integrate e-mail and written correspondence in the workstations of the contact center agents. This will allow agents to handle all customer interactions directly from their desktop no matter how the customer chose to initially contact the company.” [15]

10.3. Case 3: what is the best option in this situation (Avaya)?

“As the exclusive agent for Caterpillar sales, rentals, and parts throughout Middle Tennessee, West Tennessee, and North Mississippi, Thompson Machinery Inc. continually strives to build on its 66-year commitment to a philosophy of “Lasting Relationships, Superior Services, Intelligent Solutions.”

As the disparate telephone systems at several of their 11 locations neared end-of-life status, the Thompson Machinery management team decided to acquire a company-wide telecommunications solution that would provide a strong foundation to meet the current needs of the business and to support future growth.
Challenge
“The trigger point for us was a series of failures on our voicemail systems at the headquarters facilities in LaVergne and Memphis,” explained JJ Lay, Master Black Belt. “That, plus persistent problems with the other systems at our branch locations, started us thinking about developing a new system that could solve all the difficulties we were having and provide our employees with the communications capabilities they really needed to provide outstanding customer service.”
Managing the different phone systems at Thompson Machinery’s several locations was difficult and costly. At the headquarters locations, the IT team often had trouble obtaining parts, and the voicemail system was failing rapidly, frequently not coming back on after a re-start. The branch stores depended on service from their providers, and time was often wasted going through several contacts to obtain service. Costs for MACs, parts, and new equipment could easily get out of hand.
Most important, there was no interconnectivity among the locations, other than between the two headquarters offices. Eric Newsom, IT Manager, commented, “This was not a good image for us. It was awkward not being able to transfer customers from one location to another. An example of this was, if someone who called a store needed to contact our credit manager, who’s at another location, it couldn’t be done by a transfer. The customer had to hang up and dial another number. That irritated people, and we realized it just wasn’t good customer service.”

When the Thompson Machinery team decided to acquire a new system, their primary goals were:

- To increase connectivity.
- To improve customer service at the headquarters locations and branch stores/service centers.
- To create a centrally managed system with standards that could be applied throughout the company.

Thompson’s Six Sigma group took the lead by creating a voice-of-customer survey for both employees and customers. Every employee had a chance to list what they’d like to be able to do with the new system. From this survey emerged an RFP that Lay describes as “huge” - over 100 pages. A consultant was engaged to help prepare the RFP and evaluate vendors.

Solution
According to Newsom, the field of vendors was ultimately narrowed down to Cisco and Avaya. “Avaya won our business on the merits of their technical features,” Newsom explained. “We were particularly impressed by the way the Avaya system would work in survivable mode. We also felt it was extremely desirable to have the open platform, so that in the future we would not be tied to specific equipment. We liked the idea of being able to select from a variety of routers and other types of equipment.”

Thompson Machinery chose an Avaya Channel partner to manage the telecommunications project and to coordinate with Extreme Networks for the data center and the network epicenter. Lay explained, “After talking with several vendors, we felt that the Avaya Channel partner had the greatest breadth of experience to plan, deploy, and support a complex system involving several locations. We verified the quality of their service by interviewing several of their customers, in a discovery process set out by our Six Sigma group. Throughout the installation and now that the system is in operation, we rely on the knowledgeable support they provide to us.”
The solution developed for Thompson Machinery is an all-IP platform that includes Avaya Communication Manager with Avaya S8720 servers and G350 gateways. LaVergne is the main site, with redundancy and failover to the Memphis site. Additional applications include Avaya Contact Center Elite, Avaya IQ, and Modular Messaging. The networking infrastructure is provided by Extreme Networks.

The company has created an extended contact center for parts ordering and the help desk, with several agents in LaVergne and at least two agents in each of the branch locations.

Value Created

**Customer service improvements.** “The flexibility and the sophisticated routing capabilities of our Avaya solution have enabled us to build a contact center that addresses our customers’ different needs and preferences, while speeding up our service to them,” Lay commented. “It’s what we call a ‘tiered’ contact center because it enables customers to ‘come into’ it at the corporate, branch, or individual level. Customers who want to deal with only one person can come into that person’s queue or voicemail via a personal DID, and customers who want to deal just with a specific store can be queued up for a particular store. Alternatively, customers who simply want to talk with the next available parts agent at any location can receive service on that basis as well. All these options are comfortably built into the menu system.” The preferences of customers were determined by a voice-of-customer survey that indicated approximately 50% of customers fall into the individual/store category and the other 50% fall into the next-available-agent category.

**Streamlining business processes/improving productivity.** Thompson Machinery’s contact center solution also helps to streamline their business processes and optimize staff utilization. Calls can be distributed across their 13 locations, helping to balance the workload and accommodate the fluctuating cycles of business. For instance, on a particularly busy day, a store may have long lines of people at the counters. When this occurs, that store can direct calls to other locations to relieve the pressure.

**Connectivity.** According to Newsom, Thompson Machinery’s new Avaya platform now delivers a level of connectivity that “people feel they just couldn’t get along without.” The ability to transfer calls to other stores has enhanced customer service, and conferencing has improved the speed of communications and decision making. A central voicemail system enables management to deliver interoffice messaging more quickly and effectively.” [16]

**Part IV: System design**

This part contains information / data about the development and integration of SAP CRM 7.0 (existing) system with SAP BCM. In this part, the following options were examined: chapter 11 contains the establishment of the integration, chapter 12 contains the establishment of scenarios.
What do we want to achieve with a demo environment?
In relation to the benefits that "Communication-Enabled Business Processes (CEBP) offers, (potential) customers of Accenture are increasingly looking for Communication Management systems like SAP BCM.

Accenture translates the demand/interest of (potential) customers to CMS into the need for more knowledge and experience of CMS in general and SAP BCM in particular. From several projects within Accenture, employees are specifically looking for this knowledge/experience.

What do we need for a demo environment?
See the SAP '6SP9_Example_installation.pdf' documentation.

Which processes / components are there (SAP BCM with SAP CRM 7.0)?
- Agent Logs on to the Contact Center
  - Logon from IC WebClient
  - Logon from the Dialer
- Agent Receives an Incoming Phone Call
- Agent Initiates an Outbound Call
- Agent Does a Blind Transfer
- Agent Does a Warm Transfer
- Agent Initiates a Conference

For further information, see the ‘Integrated_Communication_Interface.pdf’ documentation.

11. Establishment of integration between SAP BCM and SAP CRM

Due by issues during the installation and the limited time available it was not possible to achieve the establishment of integration between SAP BCM and SAP CRM.

List of issues and solutions:
[Input Sicco Miedema]

12. Establishment of scenarios

Due by issues during the installation and the limited time available it was not possible to achieve the establishment of scenarios.

Preparatory work is performed, including:
- Registering the SAP BCM application for SMTP.
- Requesting email addresses.
  - sap bcm.demo@accenture.com
  - sap bcm.demo1@accenture.com
  - sap bcm.demo2@accenture.com
- Requesting telephony.
  - +31 3654-75112
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## Appendix A: Glossary

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<th>Definition</th>
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<td>SAP Business Communications Management</td>
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<td>SAP CRM</td>
<td>SAP Customer Relationship Management</td>
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<td>CMS</td>
<td>Communicatie Management System</td>
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<td>CEBP</td>
<td>Communication-Enabled Business Processes</td>
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Appendix B: Genesys

1. What are the differences with SAP BCM?

Functionality / solutions
Back-Office Automation

“In many industries, an increasing number of employees who manage customer-related tasks now work outside of the contact center. Because customer service relies on all resources within the contact center and outside it, all employees responsible for customer service delivery must work efficiently and cost-effectively. The problem is employees in these increasingly decentralized, customer-impacting roles outside the contact center face unique challenges when managing human-related tasks that typically reside in the back office. These challenges in the back office include:

- Underutilization of all staff resources which adds significantly to operating expenses
- Backlog of work that can be days or weeks old, leading to customer frustration
- Proliferation of customer-facing channels and systems to manage
- Lack of visibility into operational performance

Genesys solves these challenges for an organization using intelligent Workload Distribution (iWD) to dynamically prioritize the distribution of work tasks to the people best suited to handle them. It provides out-of-the-box functionality designed specifically for the business user that integrates resources, contact center capabilities, and internal business processes - and delivers business benefits quickly for a compelling return on investment. Genesys iWD works in concert with existing enterprise software applications such as ERP, BPM, and CRM, as well as homegrown legacy systems, to create a single, global task list, which is sorted based on business value. Only with a global task list can the enterprise ensure the right resources, regardless of location, are proactively receiving the most critical or highest value tasks, regardless of media-type or system, at the right time and right location.

Advantages:
- Creates compelling back office optimization
- Improves employee performance across the enterprise
- Adheres to internal and external service level objectives
- Enhances visibility into operational performance and compliance
- Strengthens business agility throughout the enterprise
- Increases operational control, functionality, and efficiency across the enterprise
- Shortens implementation time from concept to production and lowers risk compared to custom development” [17]

Collections

“At a time when everyone’s collection volumes are up and businesses are competing for customers’ goodwill and limited resources, success requires creativity, a commitment to the customer relationship, and optimal efficiency in the contact center.
Genesys can help businesses leverage their existing customer service infrastructure to increase collections success. With Genesys, businesses can identify and contact the right customer at the right time, based on customer data, history, and business rules. They can optimize campaigns, call completion rates, and successful debt conversions. They can support and empower customer service agents to work efficiently and effectively to maximize productivity, reduce churn, and optimize business outcomes.

Advantages:
- Increases collection yield rates by improving right party contact
- Reduces costs by leveraging any resource within the enterprise
- Enables self-to-agent-assisted service, reducing the calls handled by customer service agents
- Maximizes customer service agent productivity, creating a single pool of customer service agents and blending their collection calls
- Allows businesses to run sophisticated collections strategies, leveraging customer data and business rules" [18]

Dynamic Customer Engagement
“Today’s customers expect multi-channel customer service: phone, e-mail, SMS-text messages, chat, Web self-service, video calls, fax, and other multimodal applications. Yet because these channels are usually isolated from each other, the challenge lies in combining them to operate as one. Customer service and sales are no longer confined to the contact center, as the back-office, marketing, outsourcers, and branch/remote resources now play an integral role in customer service.

Customer loyalty is based on a new set of criteria since products are not easily differentiated in today’s Internet age. And, new social networks give the customer great power to freely express their opinions to an open audience, has the potential to advance or reduce brand loyalty. To conquer these challenges, implementing Dynamic Customer Engagement strategies are crucial.

Dynamic Customer Engagement (DCE) strengthens customer relationships and optimizes business outcomes by proactively engaging customers with the ideal service experience through any channel. It identifies the customer need, transactions, and value to deliver an excellent experience at every touch point, turning customers into advocates who not only provide a consistent revenue base, but also bring new business. DCE drives revenue growth, increasing customers’ willingness to purchase and also containing costs.

Advantages:
DCE provides convenience and goes beyond customer satisfaction. When customers are engaged, they are likely to:
- Make brand recommendations to friends
- Purchase additional products
- Be the least expensive to service
- Stay loyal to a brand or company” [19]
Emergency Response
“The Genesys Emergency Response solution enables a true 360-degree view of emergency communications for government and campus agencies, based on emergency response that is as effective for inbound channels as it is for outbound channels. Our emergency response system goes beyond the basic outbound telephone, mobile, text, and e-mail notifications, and takes into account the “return wave” — the influx of incoming calls requesting additional information after the initial outbound notification has been sent. Outbound notification can be finely tuned, allowing citizens and students in different areas to receive different information, such as in their native language, for example. Inbound communication channels allow them to get the answers they need via self-service, phone, Web chat, e-mail, and text messages. The Genesys Emergency Response solution also automates the outreach to key responders, freeing staff to focus on the crisis and its aftermath.

Advantages:
• Provides two-way communication that handles the "return wave" of customer response to notification - without tying up 311 and 911 phone lines
• Allows you to keep up with constantly changing conditions
• Creates a single information flow across all government emergency notification and response channels that can also integrate citizen and student information
• Enables you to better coordinate resources when situations threaten to overwhelm local resources
• Provides the information to evaluate real-time and post-event performance
• Integrates easily and cost-effectively into your existing notification system to take you to the next level in emergency communication” [20]

eServices
“The key to growing your business today is being where your customers are and engaging them - anytime, anywhere. Your customers already use e-mail, chat, and text messaging as primary forms of communication, and your business can tap into these channels to deliver a dynamic customer engagement that is convenient, competent, personalized, and proactive. Furthermore, your customers routinely use the Web to conduct research, resolve issues, and share opinions regarding their interactions with your company via social networking. Your business can capture this knowledge to improve product offerings and support - and to strengthen your competitive position.

The difficulty is that, all too often, customer service and sales efforts are fragmented into “silos” scattered throughout various functional departments and lines of business, with no multi-channel visibility into previous customer interactions. Because of this, the quality of customer service delivery can be inconsistent.

Genesys eServices enable cross-channel conversations that deliver a consistent experience as customers transition to non-voice channels. By creating a single conversation over time - across phone, Web, and mobile channels - you can more effectively engage your customers, and meet growth and customer satisfaction objectives. The ability to intelligently integrate all communications into a single flow that uses the same business logic to route interactions to the right agent together with complete customer information, also allows you to reach out to customers via online messages, rich-media channels, and proactive chat sessions that can enable you to turn Web visitors into buyers.
Advantages:
- Reduces the cost of existing face-to-face and call center support channels
- Gives you a competitive advantage in building customer loyalty - which reduces churn and, therefore, costs
- Grows your business by engaging with customers and prospects to identify the best sales opportunities through their preferred channel in real time
- Allows your business to tap into a much wider range of customers and their purchasing power
- Enables you to increase your portfolio of offerings without expanding staff or infrastructure
- Provides agents with the information they need to quickly solve the customer's inquiry on first contact
- Increases customer satisfaction with a consistently satisfying experience across all channels” [21]

Helpdesk
“Help desks are consistently faced with conflicting challenges: provide the highest quality service at the lowest cost. To achieve this feat, customer service agents must quickly have the right information at their fingertips to respond to any inquiry spanning voice, e-mail, and chat.

Genesys allows help desk providers to offer personalized customer service through multiple channels, while increasing the efficiency of current resources. Customer service agents see a single interaction history for each customer, ensuring consistency. Knowledge management interprets customer intent and delivers resolution information to customer service agents in a highlighted format that makes it easy to identify, and to insert into e-mail messages and chats. Co-browse allows detailed instructions and visual aids to be pushed to customers. Genesys even allows additional customer service agents, outsourcers, at-home agents, and specialists to be pulled into the help desk, as they are needed.

Advantages:
- Ensures response consistency across channels using a single interaction history
- Can be used in both internal and external support environments
- Speeds resolution time
- Creates a virtual resource pool to increase productivity and management efficiency
- Improves customer satisfaction
- Reduces both customer service agent and telecommunications costs” [22]

iCFD
“The Genesys intelligent Customer Front Door (iCFD) integrates self-service with customer data and business logic to create a more personalized customer experience.

When customers call the contact center, they’re often confronted with poorly-designed automated phone systems. The result is that customers often hang up out of sheer frustration, which exacts a high price on customer satisfaction and loyalty.

To move the needle towards improved customer satisfaction, companies need to deliver dynamic customer engagement that is friendly, intuitive, and on the customer’s terms. The Genesys intelligent Customer Front Door not only provides a branded greeting for each caller, but also gathers the
caller’s intentions, adds contextual information about the caller’s profile and history, determines the most appropriate next step - self- or assisted service - and then routes them to the most suitable resource to effectively resolve the interaction.

Genesys iCFD, powered by Conversation Manager, enables a dynamic approach to self-service by linking contextual customer information with business rules to provide the optimal customer service experience.

Advantages:
Using this integrated customer-service approach, companies can:

- Create an excellent customer brand experience that dynamically anticipates and delivers on customer needs
- Provide personal, relevant information in a timely manner to pre-empt inbound calls
- Automate outbound calls previously made by live agents
- Reduce high-volume inbound interactions
- Increase revenues with interactive outbound sales campaigns that don’t require live agents” [23]

IP Solution
“Customer service solutions with a rigid contact center infrastructure can’t meet evolving customer expectations in an age where one bad experience can send customers to a competitor. Traditional telephony requires extensive equipment wherever agents are located, only handles voice calls, and makes it difficult to integrate experts outside the contact center to increase first-call resolution.

The Genesys IP/SIP solution is open, standards-based, infrastructure agnostic, and 100% software solution built on the SIP (Session Initiation Protocol) standards allows you to intelligently leverage resources across the organization and across geographies to meet customer demand fluctuations. This IP based contact center enables a single customer service pool that incorporates resources at remote branches, home-based and outsourced agents, and experts outside the contact center. In addition, SIP facilitates richer customer experience since it supports multimedia interactions, including voice, video, IM/UC and Flash. The Genesys SIP solution enables a virtual contact center across the entire organization, eliminates the need to duplicate equipment at each location, and overlays the existing infrastructure to minimize cost. It also allows flexible SIP migration of an organization at one office or an agent at a time without disruption to customer service.

Advantages:
- Virtualize disparate contact center environments, fully integrate customer service operation, and eliminate operation silos
- Enable enterprise-wide customer service by optimizing and virtualizing resources beyond contact center, improve customer experience, and lower operational cost
- Enhance first-call resolution through front- and back-office integration<
- Cut cost and simplify operation management by reducing equipment at premise
- Prevent hostage by single vendor and allow companies to select best-in-class contact center applications based on function, price, and business objectives
- Improve customer service performance, customer loyalty, and up-sale/cross-sale revenue stream” [24]

Performance Management
“Businesses today need to make timelier and more accurate decisions, gain visibility into operational performance, and ensure business operations are aligned to corporate goals. Unfortunately, many are still relying on traditional performance reporting and analytics, which are designed to document what has happened, after it happens, at a very low operational level. And, adapting performance reports to better fit business needs usually involves IT and a long wait. Historical context is important, but to manage performance and solve problems before they become business issues also requires real-time intraday performance management.

Genesys Performance Management delivers both real-time insight across the entire customer services organization and the historical insight to give it long-term context. Business and operations managers and key users can see the real-time graphical metrics and Key Performance Indicators, based on their role, to identify performance and service issues as they develop and take corrective action before they affect customers and revenues. Contact center agent performance capabilities allow agents to manage their own performance in real time, correlate performance with supervisors, and receive the information they need. Executives and managers also have the information they need to study trends and patterns so they can streamline operations and align operations to goals.

Advantages:
- Allows operational performance to be managed in real time
- Provides appropriate information to users, based on their role
- Enables the tracking of previously “untrackable” business processes
- Drives continuous process and performance improvement
- Empowers users to answer their own questions by building or modifying reports with a drag-and-drop tool
- Increases customer service accountability and alignment to corporate business goals” [25]

Proactive Contact
“Today, every enterprise wants to achieve competitive differentiation through quality customer service. With Genesys Proactive Contact, enterprises have an effective low-cost way to achieve differentiation by engaging customers through relevant reminders or notifications that enhance their daily life. These include reminders that reduce operating costs and boost revenues, such as appointment reminders and shipment notifications, as well as important service notifications with power disruption updates, emergency information, and fraud detection awareness.

Genesys Proactive Contact is tightly integrated with the industry leading Genesys Voice Platform (GVP) solution to automate transactions with touch tone or speech capabilities, handling them in most cases without human resources. These transactions include flight re-bookings, subscription and prescription renewals, and many others that require customer interaction. As part of the comprehensive Genesys suite, Proactive Contact supports a range of contact center channels including voice, e-mail, and SMS text - including the ability for customers to speak with an appropriately skilled live agent, if necessary.
Advantages:

- **Increase the revenue of outbound campaigns by tapping customer data to reach the right customers**
- **Increase customer satisfaction by proactively addressing customer needs**
- **Increase customer outreach at low cost with multiple dialing modes, including predictive and progressive dialing**
- **Enable customer service contact through a choice of channels: voice, SMS, e-mail, or outbound IVR**
- **Better manage the complete customer lifecycle**
- **Benefit from an open, scalable, proactive customer care software solution**
- **Execute campaigns in a virtual contact center environment without duplicating hardware at remote sites** [26]

Social Media

“Social media have evolved into a giant megaphone through which consumers can very publicly address customer service issues. And with studies showing that consumers are spending ever-larger portions of their online time on social media sites, companies are likewise looking to connect with their customers via this emerging platform. They’ve established presence on social media sites, created dedicated social media staffs that post official company messages and respond to customer posts, and begun monitoring what consumers post about their brands.

Unfortunately, most companies lack the ability to effectively capture and share social media content across voice, web, mobile and social media touch points, as well as over time. So when customers share their bad experiences on social media sites and then find themselves having to repeat their grievances to contact center agents who lack access to those posts, the result is a disconnected customer experience. The message to companies should be loud and clear: By creating an integrated environment in which social media content is leveraged throughout the enterprise, companies can capitalize on an emerging and personal real-time customer service touch point.

The Genesys Social Media Solution is designed to help organizations create the integrated approach they need to turn the social media opportunity into real business benefits. It delivers the capabilities companies need to establish social media as an emerging marketing and customer service touch point, and ensures that they capitalize fully on those efforts to deliver a satisfying customer experience.

Advantages:

With the Genesys Social Media Solution, companies can gain the ability to:

- Listen to what customers are saying, allowing them to better understand the prevailing sentiments about their products and services, as well incorporate valuable “tribal” knowledge into their corporate knowledge bases
- Prioritize social media interactions by social graph, SLA and business value, and route, them to the right resource - just as if they were phone calls into the contact center - enabling them to take appropriate action when warranted
- Engage directly with customers, using social media platforms to respond to, inform, and notify
Integrate social media interactions across marketing and customer service, as well as across customer touch points, to create a single customer service conversation, and to provide business executives with valuable insight via real-time and historical reporting” [27]

**UC Connect**

“The Genesys UC Connect solution facilitates the integration of the Genesys suite and unified communications (UC) platforms, allowing the expansion of the labor pool beyond the physical contact center, and enabling branch and back-office employees, expert agents, and other workers across the enterprise to play a vital role in the customer service operation.

With UC Connect, Genesys directly integrates its industry leading Customer Interaction Management (CIM) platform with leading UC platforms, including IBM Sametime and Microsoft Office Communications Server 2007. This breaks down the traditional barriers that, in the past, made it difficult for customer service agents to both transfer calls to back- and branch office workers, and/or use other innovative UC capabilities such as instant messaging, to access resources and expertise located outside of the central contact center operation.

Advantages:

- Enable a seamless hand-off from the contact center to branch or back-office workers through a tight integration that protects infrastructure and application investments on both sides
- Maintain customer service best practices through features unique to UC Connect
- Increase efficiencies with a broader, more skilled labor pool
- Increase customer satisfaction and retention by making the best resources available to fulfill customer requests
- Realize a return on your Unified Communications investment” [28]

**Workforce Optimization**

“A key aspect in determining business success is the ability to effectively influence and leverage employee performance. With knowledgeable and time-pressed customers expressing complex needs via a wide array of touch points, the art of efficiently delivering customer service is more important than ever.

While workforce optimization solutions have been around, these multiple legacy systems hold disparate pieces of employee data, making it difficult to pinpoint and address employee needs, business needs, and ultimately customer needs.

A Gallup survey found that 26% of employees are engaged, 55% are passively engaged and 19% are actively disengaged. By accurately measuring employee effectiveness, businesses can identify mid-tier employees and get them to step performance and their ability to improve customer satisfaction, productivity, and revenue growth. Employee engagement requires a streamlined methodology to match skills with customer needs; proactively assess and address competency gaps, efficiently manage training programs and update skills data to ensure all interactions are delivered to the right employee at the right time.
The Genesys Workforce Optimization Suite delivers the key capabilities - workforce management, skills management, quality management, customer survey tools and analytics - that provide a more holistic approach to managing employee competencies and developing talent pools across the enterprise - while minimizing overhead costs. Now, businesses can target the right training, skill development and career growth to the right employee at the right time, for a more engaged, efficient and effective organization.

Advantages:
Using the Genesys Workforce Optimization Suite enables organizations to:

- Establish business objectives and targets
- Plan and develop the right staffing levels
  - Assess adherence to service level agreements
  - Analyze and identify employee competency gaps using both internal and external data
  - Improve performance with employee-specific training to close the gaps
  - Optimize routing and enable continuous feedback through monitoring and coaching” [29]

Scalability
The Genesys Product Suite
“Designed to improve customer satisfaction, the Genesys Product Suite enables sophisticated routing and reporting of customer interactions across voice, e-mail and Web channels. Genesys ensures that your customers are quickly connected to the best available resource - the first time.

Genesys software is based on an open platform approach, enabling businesses to deliver customer service across any network and any site, leveraging investments and existing infrastructure.

Genesys software is based on open standards and can be quickly integrated with leading CRM applications, ensuring effective application integration and better use of customer information for personalized service.

To support your long-term growth, Genesys offers the most scalable contact center software in the industry, with the ability to route nearly 1 million contacts and more than 40,000 e-mails per hour.

Genesys services can be leveraged in any combination - as well as incorporated into our partner offerings - to maximize success in your unique environment.

The results for businesses are more satisfied customers and greater market share.” [30]

Target
Banking
“More than ever, banks need to differentiate themselves with highly personalized financial customer service that keeps current customers and wins new ones, even as they cut budgets and work to improve profit margins. This means increasing operational efficiency and making the best use of existing resources, including the ability to integrate multiple sites into a single contact center that delivers consistently high-quality multi-channel customer service across all the channels customers
Genesys understands the challenge of increasing service quality while reducing costs. With Genesys, customer service agents and branch personnel can see the customer’s profile and recent activity, and use that information to personalize financial service and offers. A virtualized contact center allows multiple sites to be managed as a single contact center with one set of business rules and goals. Using intelligent Workload Distribution, banks can integrate resources, contact center capabilities and internal business operations to streamline operations that occur across an organization, such as loan processing. Genesys raises productivity, reduces costs, and enables the delivery of financial customer service that turns customers into advocates.

Advantages:
- Increases customer satisfaction by connecting customers to the most optimal financial resource regardless of location
- Reduces operational costs with the effective utilization of enterprise-wide resources
- Eliminates bottlenecks by enabling team-wide visibility into complex financial tasks
- Identifies high-value customers for delivery of specialized financial customer service and increased cross-sell/up-sell revenue
- Improves customer service agent productivity and satisfaction
- Provides a seamless customer experience across channels” [31]

Communications
“Communication companies are facing tough challenges, such as increased competition and decreased budgets, while having to simultaneously find ways to keep current customers and entice new ones. Many of these companies struggle because they are unable to distinguish their business in a market where competitors are chasing the same customers with the same triple and even quadruple play products, which results in high user churn and makes it difficult to increase average revenue per user (ARPU). At the same time, communications providers are challenged to cut high workforce costs and increase business efficiency. To prosper, they need to build strong customer relationships and effectively implement cross-sell and up-sell strategies based on those relationships, integrate front- and back-office operations, and gain maximum efficiency out of their existing workforce.

Genesys helps you deliver dynamic customer engagement, a service experience that builds customer loyalty, attracts new customers, and serves as a strong differentiator for your brand. Because Genesys also has integrated contact center solutions that improve operational efficiency, provide up to the minute and historical performance insights, and help you make the best use of existing resources, you can reduce costs as you offer better service.

Advantages:
- Grows voice and data ARPU
- Reduces churn with improved service
- Provides consistent service to customers across their preferred channels
• Increases revenues and margins through identification and capture of sales opportunities
• Maximizes staff resources to handle high call volumes and reduces call times” [32]

Education
“Today’s educators are faced with growing challenges to improve access to resources, enable lifelong learning and deliver services in new ways.

Alcatel-Lucent enhances the learning experience for your students by making your classroom and online education tools more efficient. Our solutions widen access to resources in a cost-effective way, improve collaboration between institutions, and open new avenues for connecting knowledge.” [33]

Government
“Serving the public has never been more difficult. Government agencies at all levels face the challenge of meeting increased citizen expectations with shrinking staff and budgets. Citizens now expect to be able to access information around the clock via phone, Web, e-mail, and other channels and want competent 211 and 311 service and an emergency notification and response system. In the next few years, an estimated 40% of experienced government employees are expected to retire, draining knowledge pools. As budgets become tighter, agencies need to increase operational efficiency, make better use of self-service options, and generate good metrics that justify spending.

Genesys allows government agencies to meet these challenges and more effectively serve citizens by helping agencies to seamlessly blend self-service and agent-assisted service, and provide constituent information to agents to speed issue resolution. Performance management helps identify and solve issues before they become costly problems, and provides longer-term metric reporting. Genesys also automates a proactive notification system to notify citizens about all occurrences that could affect them, whether regarding a street closure or an emergency situation. By increasing operational efficiency, Genesys allows agencies to make the best use of all their resources.

Advantages:
• Increases self-service adoption and reduces the cost of agent-assisted calls
• Offers a consistent cross-channel service experience
• Allows the public to contact government agencies at their convenience
• Makes the most efficient use of existing resources
• Handles disaster preparedness and recovery with an effective emergency notification and response system
• Provides the data to justify departmental expenditures” [34]

Healthcare
“Healthcare providers are under tremendous pressure to enable patients to afford the ever-increasing costs of medical attention and to support the demands of an aging population. With fixed payments threatening to erode profits, these organizations need to improve operational efficiencies and reduce costs in order to support profit margins. Healthcare providers are also faced with the need to make the best use of expensive employees, maximizing their use for patient care by minimizing administrative tasks.
Genesys helps healthcare providers leverage customer service technologies for significant operational savings, bad debt reduction, and revenue generation. Healthcare providers can reduce customer service agent costs with self-service applications, the ability to route a call to the right resource the first time, and customer information that increases first call resolution and reduces call length. Automating routine customer service communications reduces the administrative load, while increasing billable hours and proactive notifications increase on-time payment.

**Advantages:**
- Maximizes healthcare professionals’ productivity
- Ensures proper routing of customer service calls
- Speeds bill collection, reducing bad debt
- Provides 24/7 service and reduces labor costs with customer self-service” [35]

**Insurance**
“The mature insurance industry is faced with slow growth and consolidation. Price competition is accelerating as customers turn to Internet aggregators to shop for the best deals on many types of insurance. In addition, while the insurance business, and the needs of policyholders and distributors, are rapidly changing, many insurance companies can’t keep up because they are unable to differentiate their business, reach customers likely to respond to new sales opportunities, or make the most of their valued staff.

Genesys helps insurance companies strategically use customer service to attract and retain customers, and cut the costs of delivering that service. Genesys has the solutions that deliver customer information to agents so that they can provide a personalized service experience, build customer relationships through proactive communications via the customer’s preferred method (voice, e-mail, SMS), increase transparency on resources and workload, and ensure the necessary resources are available to meet customer needs without overstaffing.

**Advantages:**
- Makes customers feel valued, increasing their loyalty
- Increases Web site conversion rate
- Improves utilization of all enterprise-wide resources, while optimally matching the task, priority, and person
- Enables contacts and offers to be made through the customers preferred channel
- Improves the productivity of costly customer service agents
- Reduces overhead costs” [36]

**Manufacturing**
“Whether designing cars, assembling airplanes or developing pharmaceuticals, manufacturers must stay connected with key suppliers, dealers and distributors to gauge and meet customer demand. Avoid costly delays and optimize your resources with Alcatel-Lucent communication solutions.” [37]

**Outsourcing**
“To win business in an increasingly competitive environment, outsourcers must offer enterprises contact center and back-office fulfillment solutions that map to each customer’s individual business
strategy or goals. The need to deliver customer services that are superior, yet lower cost, than those offered in-house has outsourcers continuously seeking to improve efficiency and margins. Another challenge outsourcers face is a customer service agent turnover rate that can be twice as high as the industry average for all contact centers. Outsourcers who make the smartest technology investments will be best equipped to thrive in this market.

Genesys helps outsourcers differentiate themselves with customer service solutions that meet customer business goals and integrate seamlessly with the customer environment. Even for an industry that is already notoriously efficient, Genesys provides customer service solutions for further improving resource usage, including providing customer information to the agent to reduce handle time. We help outsourcers identify and solve potential issues in real time, before they impact service. Genesys can also help minimize the impact of high agent churn on customer service delivery.

Advantages:
- Aligns contact center performance to customer strategy and business goals
- Improves customer service agent productivity
- Routes customers to an agent with the skills to solve the issue on first contact
- Extends contact center efficiency to back-office fulfillment services
- Provides the performance insights to identify and solve issues before they affect service
- Reduces the cost of delivering superior service

Retail
“Consumer spending is under pressure. Yet, in an environment where many retailers are chasing ever fewer dollars with the same merchandise, only the largest retailers with huge economies of scale can win the “lowest price” game. At the same time, customer expectations are changing. They expect to be able to shop through multiple channels, value personalized customer service, and have high service expectations. Workforce issues have always been a challenge in the retail industry, but as margins shrink, increasing workforce efficiency has become even more crucial to success.

Genesys software solutions help retailers compete by offering the very best customer service, allowing them to provide a customer experience that attracts and retains customers while optimizing customer service processes to efficiently reduce costs. With Genesys customer service software, retailers can provide a superior and consistent experience whether the customer chooses voice, email, Web, text, or chat. Genesys customer service software also allows retailers to route customers to the most appropriate agent or expert for first-contact resolution, provide agents with customer information to personalize interactions and cross-sell/up-sell offers, and improve agent productivity.

Advantages:
- Delivers a consistently superior experience across channels, increasing customer loyalty
- Enables low-cost outbound campaigns that build relationships
- Provides intelligent self-service options that enhance the customer experience
- Taps into customer information and recent interactions to increase both customer satisfaction and acceptance of offers
- Allows the integration of additional agents and experts on-the-fly to cover peak times
- Increases customer service agent productivity
Technology
“The economy-sensitive high technology industry is facing challenging business and consumer markets. With many competitors chasing the same customers with the very same products, high-tech companies have been forced to cut the prices of their products and can expect further price pressures. Lower profit margins have, in turn, made it difficult to provide quality customer service. Many companies disappoint customers with their slow response to e-mail and Web contact, forcing customers to rely on the phone for their toughest and most critical problems. Or, with customer information scattered among legacy systems, agents may not have the information they need to ensure quick first call resolution. This failure to provide a good customer service experience threatens the customer relationships that high-tech firms need to grow their businesses.

Genesys helps technology contact centers deliver the very best customer experience as efficiently as possible. With Genesys, companies can integrate customer service interactions from all communications channels and distribute them using a single set of business rules, which allows e-mail and Web service to be as effective as phone service. Customer information can be gathered from across the company, so customer service agents have the information they need to make each interaction a personalized customer experience. Genesys also provides customer service solutions to optimize resources and processes at customer touch points across the business, to increase customer satisfaction.

Advantages:
- Makes customers feel valued, increasing their loyalty
- Enables the cost-effective delivery of excellent service
- Provides a consistently superior customer experience across all channels
- Provides the performance insights to identify and solve issues before they affect revenues
- Improves the productivity of costly technical support staff” [40]

Transportation
“Passenger demands on public and private transportation systems are rapidly increasing. From ports and roads to rails and skies, proven reliability, non-stop service and improved passenger safety and comfort are key baselines for every operator.

Alcatel-Lucent’s full range of communications systems enables transportation operators to meet these requirements while adapting to developing challenges and trends in the transport environment.” [41]

Travel and Hospitality
“The travel industry is subject to intense price competition, due in part to things such as Internet tools that allow price comparison and offer discounts. At the same time, traveler’s service level expectations are higher and interactions are more complex. Both before and after the sale, customers need to be able to connect with travel providers over any media - e-mail, Web collaboration, or chat - from anywhere, at any time. To prosper, travel businesses need to provide superior multi-channel customer service while reducing costs.
Genesys allows the travel industry to offer the personalized customer service required to acquire and keep customers, reinforce brand image, and generate revenues. Whether customers communicate using voice, e-mail, or chat, Genesys helps route customers to the best resource to solve their issue on first contact. Sophisticated voice self-service lets customers handle routine interactions, such as checking flight status, without engaging a live agent. Genesys also simplifies customer segmentation, allowing travel providers to deliver the highest level of service to their highest-value customers.

Advantages:
- Allows the delivery of standardized, consistent multi-channel service
- Intelligent routes customers to agents with the expertise to offer products and services tailored to the customer
- Provides 24/7 responsiveness to customer needs
- Improves service to high-value customers without additional resources
- Increases customer satisfaction
- Increases up-sell and cross-sell revenues” [42]

Utilities
“To sustain leadership, utilities must provide great service while reducing costs. Even a slight improvement in customer satisfaction can have a significant positive impact on market value growth. Yet, economic and competitive challenges are creating pressure for utilities to reduce operating costs. Since contact centers consume 40% of a typical utility’s total overhead, it’s crucial for utilities to optimize their customer service delivery to ensure customers’ increasingly high service expectations are met within budget.

Genesys customer service solutions allow utilities to meet customer expectations and generate new revenues by working leaner, faster, and smarter than ever before. Intelligent self-service options reduce call volume and allow customers to access information at their convenience. Proactive contact reduces the cost of missed appointments and bad debt. Customer callback options and the addition of outsourced and at-home customer service agents - who can handle interactions on-the-fly as they are needed - cut the costs of handling call spikes. The ability to integrate resources, contact center capabilities, and business processes increases efficiency across the organization.

Advantages:
- Allows you to meet response times while reducing costs
- Eliminates operational inefficiencies
- Provides 24/7 responsiveness to customer needs
- Reduces service and labor costs
- Helps you prepare for PUC inquiries with automated diagnosis of contact center bottlenecks, performance reports, and customer contact records” [43]

Other
Genesys Enterprise Customer Service Solutions

“For enterprises in any industry, excellent customer service provides a tangible differentiator that increases both customer loyalty and sales. And customer expectations are higher than ever - they
expect you to know who they are, and they want to access information and handle tasks at their own convenience through the channel of their choice. Plus, they can be fickle - just one bad experience can send them to a competitor.

Genesys helps optimize your customer service delivery enterprise-wide. With Genesys, companies can integrate customer service interactions from all communications channels and distribute them using a single set of business rules. Customer information can be gathered from across the enterprise, so agents have the full details they need to personalize the current interaction and increase the likelihood of cross-sell/up-sell success. Intelligent voice and Web self-service provides 24/7 access at a lower cost than engaging with a live agent. Genesys also provides the tools to optimize resources and processes at customer touch points across the business.

Advantages:
- Provides an experience that makes customers feel valued across channels
- Increases first-contact resolution
- Increases sales by routing high-value customers to specialized agents
- Enables low-cost outbound campaigns via the customer’s preferred channel
- Maximizes agent productivity
- Aligns customer service processes throughout the company" [44]
Interfaces

Call Contacts Cindy has made 6 calls to us for help with her configuration. They are delaying future purchases until she gets configuration answers. Please help her with configuration issues. This call is being transferred to you with approval of customer care supervisor Mark Radovich based on your skill level with this product.

These notes, along with all attached data, are sent to any supervisor that is asked to participate in the call. For experts, all attached data is rendered in a chat window using their desktop collaboration client (see figure 9).

Figure 9: Genesys Agent Desktop GAD 1 (http://www-06.ibm.com/software/jp/lotus/products/sametime/Agent_Desktop_copy--Genesys.gif)
Links to other applications

Gplus Adapters

“Genesys Gplus Adapters are vendor-certified solutions that integrate Genesys’ real-time interaction solutions with vendor applications, including customer relationship management (CRM) and enterprise applications from Oracle/Siebel, SAP, and Microsoft. Genesys Gplus Adapters enable a consistent customer experience across all communication channels and provide a single interface for the agent to access the CRM and enterprise applications. This end-to-end integration provides a universal view of the customer, facilitates agent up-sell and cross-sell activities, and improves productivity.

Advantages:

- Provides customer data to the agent so that customers never have to repeat information
- Allows for delivery of consistent and appropriate customer service across voice, e-mail, and chat within the unified desktop environment
- Speeds deployment
- Increases productivity
- Leverages and extends existing infrastructure investments
- Helps companies understand customer behavior, coordinate marketing across channels, and focus resources on the best opportunities” [45]
Gplus Adapter Features

“The Gplus Adapter product line includes these key features for integrating Genesys solutions with enterprise applications:

- Pre-integrated customer service solution
- Single view of the customer across the enterprise
- Integration of customer data (screen pop)
- Simultaneous interaction management
- Agent access to enterprise performance statistics
- Inbound call handling for all adapters

Currently available Gplus Adapters:

For Oracle
- Gplus Adapter for Siebel CRM
- Gplus Siebel E-mail Option
- Gplus Siebel Work Items Option

For SAP
- Gplus Adapter for mySAP CRM
- Gplus Adapter for mySAP ERP
- Gplus Data Access for SAP
- Gplus SAP E-mail Option
- Gplus SAP Work Items Option

For Microsoft
- Gplus Adapter for Microsoft CRM
- Gplus E-Mail & Activity Routing Option” [46]

2. What is the market share?

“Alcatel-Lucent edged out Cisco for the No. 2 market share ranking in agent shipments globally with a 14.6% share, and held the No. 2 or No. 3 market share position in all regions. Like Avaya, Alcatel-Lucent experienced a merger of sorts in 2010 as the company absorbed its Genesys contact center business unit, which had been operated and marketed as a separate business unit from the rest of Alcatel-Lucent’s enterprise business unit. As a result, Genesys’ sales and marketing operations merged with those of the larger Alcatel-Lucent corporation and took on responsibility for sales and marketing of all the company’s enterprise offerings, including enterprise telephony and data networking as well as its overall contact center business. Also similar to Avaya, Alcatel-Lucent’s contact center agent shipments showed a modest 3% year over year growth as compared with the combined Alcatel-Lucent and Genesys shipments in 2009. Alcatel-Lucent showed its biggest improvement in shipments as compared with those of the combined Alcatel-Lucent and Genesys businesses in 2009 in the Asia/Pacific market, while showing its biggest decline in business in the Western European market.” [47]
Appendix C: Avaya

1. What are the differences with SAP BCM?

Functionality / solutions
1) Interaction Management
   a) “Avaya Aura Contact Center

   Avaya Aura Contact Center allows organizations to leverage real-time and historical information to deliver seamless, context-sensitive customer care. It facilitates communication via voice and multimedia channels, so businesses can deliver service on their customers’ own terms.

   This software solution uses SIP along with standard SOA and Web-services interfaces to provide maximum flexibility. It helps organizations better anticipate customer needs and offers advanced functionality to quickly, efficiently, and cost effectively satisfy those needs.

   The result is a contact center that consistently delivers a unified, efficient, and highly personalized customer contact experiences that build brands and enhance loyalty.

   Thrill your customers
   The software’s multimedia capabilities facilitate routing of communications via voice, email, instant messaging and more. Context preservation allows employees to better anticipate customer needs, improving first-contact resolution.

   Enhance agent efficiency
   Powerful desktop software allows agents to simultaneously handle multiple contacts and quickly access customer context information.

   Make supervisors more effective
   A suite of easy-to-use administration tools reduce complexity and lower implementation overhead.

   Get maximum flexibility
   Open standards and a SIP-based architecture simplify development and integration of new functionality. And a low server footprint increases agility while offering room for growth.

   Improve security and reliability
   The software features real-time shadowing and automatic switchover for all core components, with zero-touch recovery.

   b) Avaya NES Contact Center

   Avaya NES Contact Center provides the ability to engage customers in new ways. A superior customer experience is created by using a single interface for blending inbound/outbound voice, e-mail, web chat, and IM interactions.
Businesses can collaborate with customers through the device and method of their choice. Contact Center applications from Avaya can be integrated with business applications using a Service Oriented Architecture. These integrated applications automate processes and orchestrate the workflow between front office and back office operations. With the graphical Service Creation Environment tool, businesses can use a single drag-and-drop GUI to create contact center and self-service workflows for greater flexibility, speed, and ease of deploying new processes with open web services.

**Unify customer contacts for consistently excellent service**  
Use open multimedia skill-based routing and reporting to manage all inbound/outbound contacts.

**Streamline service rep desktop information**  
Provide a single, context sensitive interface for service reps to handle all inbound, outbound and multimedia contacts to boost productivity and speed learning.

**Integrate outbound to increase customer loyalty**  
Create and monitor blended outbound contacts for proactive account management that drives revenues and increases customer loyalty.

**Manage easily with custom reports**  
Use a browser-based tool for comprehensive real-time and historical data. Generate custom reports using a wizard to combine data from multiple sources and gain actionable intelligence.

**Gain higher capacity, flexibility**  
Expand the contact center up to 3,350 agents per node, 66,000 calls per hour, 1,500 skill sets (150 per agent) and a virtual contact center up to 30 nodes for 100,000 agents total.

**Enhance business resiliency**  
Create a reliable contact center architecture using high availability servers for business continuity.

c) **Avaya one-X Agent**  
Avaya one-X Agent is a desktop software application built specifically to meet the needs of contact center agents.

Avaya one-X Agent gives contact center agents the desktop software they need to be more productive, whether they’re working in a headquarters location, a branch office or home office. One-touch access to functions such as conference, transfer, and supervisor assist enables agents to effectively manage both communications and agent tasks, making them more responsive and collaborative regardless of where they are working. And contact center agents can pre-record their greetings to ensure that customers are presented with the same greeting as if it were the first call of the day.
Integrated presence and instant messaging help one-X Agent users reach out to an available expert anywhere in the enterprise. Agents have the tools they need to drive first call resolution and high customer satisfaction.

**Real-time decision making**
Real-time status updates of key performance indicators keep agents informed of queue status, talk time, and other configurable metrics.

**Improved agent productivity**
Screen pop-up of customer contextual data improves productivity and customer satisfaction, eliminating time-consuming agent lookup of relevant information.

**Expanded agent pool**
Section 508 compliance means you can expand your agent pool to include the physically handicapped. Keyboard shortcuts provide access to common agent functions.

**Embedded management tools**
Supervisor Desktop offers one-click access to functions such as service observing, barge-in, and “quick alert” messaging to agents. A supervisor can coach an agent using instant messaging and viewing chat logs to ensure compliance.

**Dynamic hot desking**
Agents can sit at any desk and see their own customized instance of one-X Agent, facilitating agent mobility and maximizing use of real estate.

d) **Business Advocate**
Business Advocate manages all voice, email, and Web chat interactions via a single universal queue, intelligently routing customers in real time to the best agent for their needs. It takes into account pre-established business objectives; customer needs and business value; and the skills and availability of the current agent pool. Business Advocate actively monitors all of this information, making rapid decisions about which agent should be matched to which customer. This may mean connecting to the agent whose immediate service may produce the greatest value, instead of the caller who has waited longest.

**Get maximum value from each call**
This application lets companies define customer segmentation policies and service level goals based on business objectives. This ensures that resources are allocated in ways that maximize the value of each customer contact.

**Get more control, with less work**
Automated control, based on user-defined business rules, ensures that supervisors can manage agents and call distribution as they need to, without time-consuming manual intervention.
Improve call center efficiency
Capabilities like Predicted Wait Time and Reserve Agent Pools allow Business Advocate to foresee events that could impact service, and respond automatically in real time. This helps the contact center handle peaks in demand and other problems quickly and efficiently, without inconveniencing customers.

e) Call Center
The Call Center suite of call routing software is an Automatic Call Distribution application that maximizes routing and resource selection, allowing agents to handle calls more effectively and improving overall productivity. It offers conditional (if/then) call routing, using context-based inputs and versatile selection capabilities. Managers can choose whether inbound calls connect with the least busy agent, the first available agent, or the one with skills that best match the customer’s needs. Virtual call routing allows businesses with multiple sites to maximize resource utilization across all locations.

Call Center can integrate with traditional circuit-switched, H.323, and SIP networks (as well as hybrid environments), allowing businesses to protect existing hardware and software investments.

Improve call-routing flexibility
Sophisticated call routing capabilities give managers a wide range of options. They can connect inbound calls to the least busy agent, the first available agent, or the agent with the skills that best match the individual customer’s needs.

Reduce costs, increase efficiency
Businesses can support agent specialization and consolidate resources across sites to help build a more efficient, less costly call center.

Deliver personalized service
The system allows managers to route calls to agents with specialized knowledge of products or processes, allowing them to provide informed, personalized service.

f) Contact Center Control Manager
Avaya Contact Center Control Manager provides centralized operational administration exclusively for Avaya Contact Center Applications.

This product allows one-time definition and on-going management of the following entities and data relevant to contact center systems: Agents, Skills, VDN’s, extensions, call flows, IVR working hours, dynamic prompts and menu content.

Centralized Operational Administration
This simplifies administration and reduces labor intensive administrative tasks. It also allows the delegation of administration tasks to “non-technical” users.
Tenant Partitioning and Role Based Access Controls
Service providers and outsourcers can provide their customers the ability to administer their own contact centers; which are part of a large Avaya deployment - while maintaining system transparency, customer privacy and security. It can also support an unlimited number of tenants as part of the virtualized application layer.

Mixed Environments of Avaya Aura Contact Center and Contact Center Elite
Customers can manage both Avaya Aura Contact Center and Elite from a single interface, facilitating the transition to the SIP environment.

Active Directory Integration with Single Sign-On Functionality
This saves time and money through quick and efficient set-up and maintenance of agent data across all Avaya Contact Center products.

g) Contact Center Express
With the Contact Center Express suite, mid-size businesses interact with their customers using phone, email, text, instant messaging or SMS. Avaya’s proven ACD technology processes all multi-media channels, routing requests to the appropriate agent, who can reply using the same contact method. Contact Center Express integrates with Avaya Communication Manager and Avaya call center solutions, allowing businesses to leverage their existing investments.

Contact Center Express delivers intelligent routing, built-in reporting and Microsoft® CRM integration, contact management, and support for self-service applications. Powerful development tools, out-of-the-box applications, and wizards for agent and routing rules reduce the need for additional software development.

Maximize the value of every call
Delivering consistent, personalized service across multiple channels allows your call center to build customer loyalty and identify more cross-selling and upselling opportunities.

Improve efficiency
Contact Center Express software’s multi-channel support makes it easy for agents to handle all of their inbound and outbound contacts quickly and accurately.

Investment Protection
Leverages existing Avaya Communications Manager, Call Center Elite, Call Management System, and Voice Portal investment and common industry standards to minimize incremental resource needs.

h) Customer Service Editions
Customer Service Editions combines industry-leading Avaya call-processing software with a range of additional capabilities. Three packages give businesses fully enabled contact center functionality with flexibility for future growth.
The Essential Edition offers end-to-end inbound voice, including skill-based and data-directed routing, premier reporting, self-service, standard agent softphone, and introductory remote agent licenses.

Adding to Essential, the Standard Edition brings business rule routing options, desktop application integration, customizable agent desktop with screen-pop, and outbound preview dialing.

Building from Standard, the Advanced Edition also features support for end-to-end SIP-based contact centers, patented predictive routing and agent selection algorithms, predictive outbound dialing, and fully customizable agent desktops with video and other media.

Execute quickly
The Customer Service Editions let you set up a contact center quickly and continue to respond to dynamic business needs, with all-inclusive packages and services from a proven industry leader.

Get the features your agents need
Avaya applications give your contact-center agents the resources and customer information they need to attract new customers and build loyalty. Customer Service Editions make these tools available in a comprehensive packages.

Get actionable insights
End-to-end reporting and analytics features give you actionable insights into your customers and your call-center operations.

i) Interaction Center
The Interaction Center software suite provides enterprise-class control of contact-center communications across multiple channels: voice, video, email, Web chat, and IP telephony. It simplifies the management process, helping companies maintain high levels of service, so they can consistently exceed customer expectations. Its open-standards-based architecture simplifies design, deployment, and maintenance, so businesses can easily integrate it with their own data, applications, and switching systems, as well as those of their partners.

Improve customer service
Powerful management tools, multi-channel support, and easy integration with external data give businesses the tools they need to deliver an optimal customer experience.

Meet service-level objectives
Interaction Center uses enterprise business rules and customer segmentation data to more effectively handle incoming contacts, helping companies achieve service-level objectives.
**Simplify system management**
Centralized application management and administration of business rules, workflows, agent work items, and task loads allows businesses to streamline complex operations.

**j) Proactive Contact**
Proactive Contact software gives contact centers the capabilities they need to preview, initiate, and track outbound communications. It offers superior predictive dialing and voice detection capabilities that drive significant savings by optimizing calls to desired service levels and reducing agent idle time; effectiveness tools that give agents personal ownership of selected accounts; and other tools to optimize productivity and deliver outstanding customer service.

**Reach out to your customers**
Allows contact centers to handle inbound, outbound, and blended contacts. They can reach customers with targeted, timely communications that can help solve problems before they happen.

**Enhance efficiency**
Powerful agent and supervisor applications, advanced monitoring and reporting capabilities, and features like our industry-leading voice detection technology help eliminate downtime and improve efficiency.

**Streamline management**
Open-standard architecture and development tools, combined with built-in security features, help simplify system management.

**k) Proactive Outreach Manager**
Proactive Outreach Manager offers automated outbound campaign management, enabling organizations to create and deliver automated voice, email, or SMS messages that enable users to immediately choose a self service option or interact with a live agent.

Proactive Outreach Manager builds on the best-in-class capabilities of Avaya Proactive Contact and Avaya Voice Portal. This combination provides an open, scalable, high-availability solution that simplifies outbound campaigns to help reduce costs, capture more revenue, and improve customer satisfaction.

**Improve customer satisfaction**
Provide proactive, timely communication of information and status updates through email, SMS text or phone based on each customer’s personal preferences. Create reminder and alerts campaigns to communicate delays, status changes, and reduce missed appointments with high value staff.

**Lower the cost of service**
Lower costs by serving customers more effectively through lower cost channels where preferred and possible. Reduce inbound traffic by anticipating caller inquiries and allowing
customers to take action. Lower outbound agent costs by automating simple interactions through lower cost email, IVR, or SMS text.

Reduce OPEX and CAPEX costs
Proactive Outreach Manager runs on Avaya Voice Portal allowing you to deploy mission critical automated outbound services that leverage and compliment your existing inbound self service applications.

Increase revenues
Use Proactive Outreach Manager to create and execute customized cross-sell and or up-sell automated campaigns to raise awareness of new products and services as well as generate new or upgrade sales.

Reduce risks, costs, improve responsiveness
Improve service response and customer satisfaction by bringing outbound services in-house and gaining control over priorities and campaign timing, and sensitive customer data.” [48]

2) Reporting and Analytics
   a) “Call Management System
   Designed for businesses with complex contact-center operations and high call volume, Call Management System is a database, administration, and reporting application to help businesses identify operational issues and take immediate action to solve them.

   Using a familiar Windows interface, call center managers can view data and receive customized threshold and exception alerts, all in real time. They can also view historical reports to help them analyze trends, establish performance benchmarks, and plan new marketing or customer-service campaigns. These reports can be easily customized to suit the needs of the business. With easy access to real-time and historical data, managers can make faster, better informed decisions, for more effective contact-center operations.

   Get immediate feedback
   Real-time monitoring and customizable alerts ensure that managers can spot problems and respond immediately.

   Simplify monitoring and reporting
   A wizard and other tools make it easy to design customized reports. And managers can schedule the running and printing of reports, ensuring that the call center is always being managed using the most up-to-date information.

   Address problem areas immediately
   If real-time reports show conditions that require immediate changes to keep the contact center operating smoothly, integrated administration enables managers to instantaneously drill into admin to make the required changes.
b) IQ

The IQ contact center reporting and analytics platform consolidates real-time data from Avaya customer service solutions and enterprise business resources, to deliver insights into both customer and agent activity. It provides highly customizable reports, including dashboards that support cross-tab, drill down, and roll up for easy analytics. These outputs let managers relate activity to results, allowing them to make more informed decisions that maximize contact center efficiency.

Get deep business insights

Ongoing, in-depth data analysis gives businesses a single, enterprise-wide view of the total customer and agent experiences. These insights can help managers make faster, better-informed decisions.

Keep your business on target

IQ reports are highly customizable, allowing companies to focus on the metrics that best relate to their long-term and short-term goals.

Get the power you need

IQ is available as an application, or as a turnkey hardware/software product for small and mid-sized businesses. It offers Web-based reporting that eliminates the need to manage a desktop application, and enhanced security, including granular permissions with links to LDAP for user authentication.

c) Operational Analyst

The Operational Analyst software environment allows multi-channel contact centers to analyze performance data - both real-time and historical information - across multiple sites and vendor platforms. It includes a centralized Customer Interaction Repository that gives supervisors and business managers full access to transaction and interaction histories across voice, Web, email, and other media. Standard report packages provide actionable details and summaries that span multiple locations and communication channels.

Simplify monitoring and reporting

Real-time, multi-channel event processing automatically collects data to provide a continuous view into contact-center operations. And a centralized customer data repository provides a single source for historical reports. These help speed analysis and decision making, especially for distributed operations.

Get a single view of the customer

The centralized customer data repository, combined with sophisticated reporting systems, gives businesses a 360-degree view of transaction and communications histories, allowing supervisors to take action based on the entire customer experience.
Use a wide range of reports
Operational Analyst offers a variety of reporting options, with ease-of-use features like a browser-based wizard. It also allows companies to integrate data from other enterprise applications, for a more complete view of a customer’s business value.

d) Workforce Optimization
Workforce Optimization helps businesses balance efficiency and effectiveness by using the contact center as a strategic resource. This analytics-driven offering lets organizations capture, analyze, and act on information to improve workforce performance, customer interactions and customer service processes.

With this end-to-end offering, companies can uncover trends and discover why certain employee and customer behavior is occurring. Not only does Workforce Optimization provide a better understanding of customer satisfaction and dissatisfaction, it gives businesses intelligence to improve operational efficiency.

Processes that were cumbersome and caused dissatisfaction can be easily identified and modified. Agents who are not getting the proper training or assisting customers appropriately can be identified and coached. The Workforce Optimization solution suite provides a deeper and more meaningful look at customer interactions.

Reduces Operational Costs
Workforce Optimization reduces operational costs by ensuring that contact centers are not over-staffed, resulting in additional costs not necessary to meet service levels.

Improves Agent Performance and Productivity
Workforce Optimization improves performance and productivity through automated coaching and scorecard assessments.

Increases customer satisfaction
Workforce Optimization increases customer satisfaction by providing actionable intelligence that can be used to improve the customer experience.” [49]

3) Self Service
a) “Dialog Designer
Dialog Designer is a Java integrated self-service development environment, based on the Eclipse open-source framework. It allows businesses to quickly and easily create speech, touch-tone, voice, and video self-service applications. The visual interface eliminates the need for explicit coding—call flows and speech grammars can be represented as graphical objects, which can be dragged and dropped into place, facilitating rapid prototyping.

Dialog Designer offers self-service development tools for every stage of the application lifecycle, including design, integration, simulation, debugging, scripting, and deployment. It leverages existing Web server environments, so businesses can get more value from their services, database assets, application development tools and other investments. Available for
just the cost of media, it is licensed as part of the Avaya Voice Portal and Interactive Response software packages.

Reduce costs
Open standards, design wizards, and other easy-to-use development tools help businesses save time and money at every stage of the application lifecycle. And voice and video self-service applications are highly reusable, helping to further reduce expenses.

Deliver new services faster
Embedded VoiceXML 2.1 and CCXML 1.0 browsers allow for fast simulation and debugging of speech, voice, and call-control applications. This helps businesses speed customer-service applications to market.

Improve customer service
Self-service applications allow your customers to resolve simple problems quickly, while freeing up agents to handle more complex requests.

b) Interactive Response
Interactive Response allows businesses to automate telephone transactions, delivering enhanced service at lower costs. This interactive voice response system can answer incoming calls, ask questions, and provide information using both synthesized and pre-recorded speech; and it takes input via spoken word, touch tones, dial pulse, or TDD (Telecommunications Device for the Deaf). It can be used:

- In a stand-alone configuration, connected to a public switched telephone network either directly, or from behind an on-premises switch.
- Within a contact center, to provide seamless integration from self-service to assisted service.
- With an outbound dialer to provide automated alerts and notifications.
- With proprietary, open-standard, and custom applications.
- With TDM- and VoIP-based switches.
- As the VoiceXML browser for a VoiceXML-2.1-compliant application.

Deliver responsive service, 24/7
Interactive Response allows businesses to provide superior customer service, accepting transaction and inquiries any time of the day or night, using a convenient voice interface.

Get fast ROI
Automated service, open standards and application reusability help reduce costs, to deliver a faster return on investment.

Easy migration to IP and SOA
Transferable platform licensing and the included Avaya Dialog Designer application give companies an evolutionary migration path to IP and Service Oriented Architecture.
c) Media Processing Server

Media Processing Server 500 and MPS 1000 are full featured, competitively priced self-service solutions that offer support for advanced speech, VoiceXML, Session Initiation Protocol, multiple version ISDN and SS7 support, and many other packages and native interfaces enabling MPS to seamlessly integrate with numerous CTI applications for fast, intelligent call routing and pleasing customer experiences.

Media Processing Server 500 is the ideal self-service solution for medium-sized enterprises and small service providers. MPS 500 is suited to conventional data center environments and supports solutions up to 240 ports in size.

Media Processing Server 1000 is a self-service solution designed for service providers, medium to large enterprise, and hosted providers. Ideal for mission-critical installations requiring continuous availability and high transaction throughput, MPS 1000 provides automated transaction handling and application-controlled call handling. These capabilities are uniquely combined in an integrated, non-blocking system scaling to thousands of ports. The Media Processing Server 1000 supports comprehensive networking and data communication.

Nuance 9 Speech Engine

Nuance 9 is the latest Automated Speech Recognition (ASR) speech engine from Nuance. Nuance 9 is centered on three categories: 1) accuracy, 2) reliability and 3) ease of use and maintenance.

MPS Developer

Media Processing Server Developer is a graphical application development tool used to create and test interactive self-service applications in Media Processing Server environments.

Oracle 11g Client

Oracle 11g client is a data management solution ideally suited to the needs of mid-sized businesses.

Advanced Speech Solutions

Making use of the MPS advanced speech capabilities such as Natural Language, Text-to-Speech and Speaker Verification, organizations are able to confront their challenges head on.

CCT

CCT is an application development solution that facilitates the integration of contact center solutions with other business and communication applications such as customer relationship management systems, intelligent call management applications and third party computer telephony integration solutions.
d) **Voice Portal**

Voice Portal is an open standards based platform for automating inbound and outbound voice and video customer care. Offering industry-leading reliability and scalability, the voice self service application comes with robust management and reporting features, to help reduce costs and simplify operations.

**Improve customer service**

Voice and video self-service lets you differentiate your business by providing a superior customer experience. It allows customers to get simple requests taken care of quickly, and it frees up contact-center agents to handle more complex issues.

**Deliver services quickly, for less**

Voice Portal uses open standards to simplify integration with your existing Web and application investments. This lets you save money and implement new inbound and outbound services quickly.

**Simplify application design**

Reduce the time and expense of application design, validation, and deployment through Web Service wizards that help employees integrate databases, build workflows, synthesize speech, record phrases and prompts, and more.” [50]

**Scalability**

“The right solutions can make all the difference in improving the ongoing productivity and revenue potential of your contact center. They deliver cost savings by allowing you to converge your data and contact center applications upon an IP infrastructure. Effective contact center solutions provide for optimum load balancing based upon the work handling guidelines your company wishes to implement - under both call surplus and agent surplus conditions. They make the most of agent availability, skills, and experience and integrate readily with other productivity tools in a multi-vendor environment. Finally, and most importantly, superior contact center solutions lower your Total Cost of Ownership (TCO) and increase Return on Investment (ROI).

Avaya solutions deliver on all of these points and many more with flexible, scalable solutions designed to grow along with your business.” [51]

**Target**

1) **Education**

“Even under shrinking budgets, educators are challenged to increase enrollment, student scores, staff effectiveness, and school safety. Primary and secondary schools are under intense pressure to improve academic performance and graduation rates, which requires district-wide collaboration, flexible and widespread communications, and seamless access to resources. Similarly, institutions of higher education need to attract and retain the best students and faculty. IT is under pressure to meet the expectations of tech-savvy students while facing the daunting task of keeping the entire campus secure.”
Avaya uses communications technology to transform and improve the education environment. We streamline communications architecture, integrate a myriad of communications devices, and deliver unified communications and specialized applications that provide staff and students with both information and access. Avaya helps education institutions solve their business challenges with cost-lowering solutions and services.” [52]

2) Financial Services

“Now more than ever, financial services companies are challenged to build customer loyalty while significantly improving the cost effectiveness of operations. Companies need to offer differentiated products and services to manage the customer relationship profitably. Avaya has solutions and services to specifically address these challenges.

Using Avaya cost-effective and reliable communications infrastructure, a regional bank with 950 branches and 6 call centers saved $28 million over 5 years. With Avaya communications solutions and services, a U.S. $5 billion Credit Union was able to communicate better with customers, resulting in a $35.5 million reduction of delinquencies in 8 months.

Avaya can show you the best practices to acquire, retain, and collect from customers to maximize your investments in servicing. We can show you how to use communications technologies and services to reach your business goals and empower your staff to be more productive - all while saving money.” [53]

3) Healthcare

“In healthcare and life sciences today, patient needs for medical services are rising steadily and the industry is facing a shortage of skilled clinicians. Tomorrow, the world’s aging population will drive expenditures to ever-larger proportions of GDP. Significantly more care must be delivered to a much larger population, which will demand higher quality, greater efficiency, and lower costs.

Health insurance payers and providers—both private for-profit companies and publicly funded government entities—are under pressure to control costs, improve medical expense ratios, and slow the growth of insurance premiums so consumers and employers can afford care. To transform how care is delivered, physicians, hospitals, and health systems are increasingly measured and rewarded for quality outcomes. They must have processes and technologies in place to put more attention on patients and be more efficient with resources. Healthcare companies must supply innovative, high-quality medicines, devices, and diagnostic capabilities that improve health at a reasonable cost.

To address these industry challenges, Avaya integrates communications technology into existing clinical systems. In building solutions for healthcare and life sciences, Avaya leverages our complete communications portfolio as well as best-of-breed third party solutions.” [54]

4) Hospitality

“Recently, the Hospitality industry has faced many challenges, including a global recession, a credit crisis, natural disasters, pandemics, and terrorist attacks. But now, for the first time in more than a year, STR reports show an increase in occupancy and revPAR. However, average daily rates
continue to slide slightly as hoteliers struggle to keep rate structures intact. But with positive signs bubbling, we feel confident global room supply will continue to grow. Occupancy always recovers much faster than room rates, and soon average daily rates will catch up.

As you look for ways to save, but also grow, Avaya hospitality communications solutions can help you use communications to enable your business strategies:

- Get customer attention, starting at first contact, by improving call routing to the best resources.
- Boost productivity by linking your mobile staff to the main office and each other.
- Differentiate your guest experience by offering advanced, yet easy communications options.

Avaya offers a portfolio designed for Five Diamond hotels, limited service hotels, and anything in between.” [55]

5) State and Local Government

“Budgets are down, demand for services is up, there’s constant pressure to reduce operational costs, and improving employee productivity is imperative. In this rocky, challenging environment, governments are looking for transformative and cost-effective solutions that deliver on promise.

Avaya is a global leader in enterprise communications. We provide unified communications, contact centers, data networking, and services to businesses and governments around the world. Our solutions integrate via open industry standards with technologies in multi-vendor environments, so organizations can expand on communications functions and potential starting with their existing networks.

Avaya applications, software, and services help state and local governments simplify complex communications, improve efficiencies, foster better employee collaboration, and achieve higher levels of citizen satisfaction and public safety. By embedding communications into government operations processes, Avaya helps improve the way organizations work.

Avaya Named One of the “World's Most Ethical Companies”

Avaya has been recognized for the fourth year in a row by the Ethisphere Institute as one of the World's Most Ethical Companies.” [56]

Interfaces

Avaya Aura Contact Center

“Use Agent Desktop to handle voice, e-mail, outbound, Web communications, instant messaging, voice mail, fax, scanned documents, and SMS text message contacts. Use Agent Desktop in the following situations:

- To handle voice contacts when Agent Desktop is installed on a Communication Control Toolkit server.
- To handle voice contacts, outbound contacts (voice calls from you to customers), e-mail messages, or Web communications contacts when Agent Desktop is installed on a Contact Center Multimedia server.
To work with the Microsoft Office Communications Server to handle voice and instant messaging in a SIP-enabled contact center.

This chapter describes the main user interface of the Agent Desktop application. There are three main sections to the Agent Desktop user interface.” [57]

Avaya NES Contact Center

“Agents use the Contact Center Agent Desktop to handle voice, outbound, e-mail, and instant messaging contacts, depending on the installation and licenses. Use the Contact Center Agent Desktop in the following situations:

- To handle voice contacts when Contact Center Agent Desktop is installed on a Nortel Communication Control Toolkit server.
- To handle voice contacts, outbound contacts (voice calls from the contact center to customers), e-mail messages, or Web communications contacts when Agent Desktop is installed on a Nortel Contact Center Multimedia server.
- To work with the Microsoft Office Communications Server to handle voice and instant messaging in a SIP-enabled contact center

The Contact Center Agent Desktop also provides a status indicator and a contact timer.” [58]
Avaya Contact Center Express

“To ease your daily activities, the Avaya Contact Center Express Desktop user interface has all required options available on a single screen. The interface contains various UI controls, such as menus, toolbars, panels, status bars. You can use these controls to quickly manage various types of work items received from different customers.” [59]

Figure 13: Avaya Contact Center Express Desktop user interface

Links to other applications

Avaya Agile Communication Environment

“Avaya Agile Communication Environment software dramatically simplifies and accelerates the integration of multi-vendor communications systems with business applications. It allows businesses to streamline collaboration, CRM, and other people-dependent processes using existing communications environments.

Realize the benefits of Avaya ACE immediately through packaged applications that offer fast implementation and high ROI. Some applications reduce communications costs and increase productivity for office-based or mobile users. Others reduce downtime by improving team responsiveness during critical events.

Avaya ACE also provides toolkits that can speed development of custom applications up to five times faster than traditional methods. They are open to IT and business application developers and include pre-written adapters for many communications systems.
- **Improve business agility**
  
  Avaya ACE facilitates automatically triggered, event-driven communications. It speeds application development by exposing audio/video call control, text-to-speech, conferencing, and other capabilities as web services.

- **Reduce costs**
  
  Protect infrastructure investments by integrating existing multi-vendor PBX, video, and unified-communications systems with business applications. High-ROI packaged applications help reduce real-estate expenses, mobile calling charges, and other costs.

- **Improve productivity**
  
  The software integrates with unified communications systems to give users a single communications-rich interface for desktop applications.

- **Improve customer service**
  
  Deliver a seamless customer experience by connecting multi-vendor communications systems with leading vendors’ SOA frameworks, CRM software, and other business applications.” [60]

2. **What is the market share?**

   “Avaya held the No. 1 position for agent shipments in all regions in 2010, with market shares ranging from the low 30s up to the mid-40s at the regional level and registering an overall 40.6% share of the worldwide market for agent shipments. In December of 2009, Avaya completed its acquisition of Nortel and articulated its architectural road map for merging the two company’s contact center offerings in January of 2010. This created a somewhat challenging market for Avaya, particularly during the first half of the year, as customers, prospects and channel partners worked to understand and evaluate the new products and their respective evolutionary strategies. This had a significant impact on Avaya’s agent shipments for the year, which registered less than 1% year-over-year growth as compared with the combined Avaya and Nortel shipments in 2009, while the overall market grew at a rate of 12% year over year. Avaya saw its biggest increase in agent shipments as compared with the combined Avaya and Nortel shipments in 2009 in the emerging Asia/Pacific market, while showing its biggest decrease in shipments in the more mature North American market.” [47]