Predictive Routing

Study Notes

Topic	Description
Predictive Routing	AI-powered routing system that optimizes agent assignment
Engine	Machine learning algorithms analyze skills, availability, and contact history
Purpose	Maximize first-contact resolution and customer satisfaction
Activation	Requires Premium edition and Workforce Optimization module
Benefit	Reduces handle time and improves customer outcomes

Navigation

Admin → Architect → Routing → Predictive Routing OR Admin → Contact Center → Routing Configuration → Enable Predictive Routing

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Predictive Routing Overview

Predictive Routing is an AI-powered contact routing system that dynamically matches incoming contacts to the most suitable available agent based on multiple factors:

Key Capabilities

- **Skill-based routing** - Matches agent skills to contact requirements
- **Historical performance** - Learns from agent interaction outcomes
- **Availability prediction** - Anticipates agent availability and readiness

- **Real-time optimization** - Adjusts routing in real-time based on system state
- **Omnichannel support** - Works across voice, chat, email, and messaging

How It Works

1. Contact arrives at system
2. Contact intent and requirements analyzed
3. System evaluates all available agents
4. Machine learning algorithm predicts best match
5. Contact routed to optimal agent
6. Interaction data captured for learning

Edition & Module Requirements

Requirement	Details
Minimum Edition	Premium Edition required
Module	Workforce Optimization add-on module
License Type	Agent licenses with predictive routing enabled
Setup	Admin configuration in Architect

Study Notes - Routing Factors

Factor	Description	Impact
Agent Skills	Capabilities and certifications	High - Core matching criteria
Proficiency Level	Skill mastery degree	High - Affects quality
Availability	Agent ready state and status	High - Real-time factor
Handling Capacity	Available slots for new contacts	High - Prevents overload
Historical Performance	Past interaction outcomes	Medium - Learning factor
Queue Wait Time	Customer wait duration	Medium - Fairness factor
Contact Type	Voice, chat, email, etc.	High - Channel match
Language Proficiency	Supported languages	High - Communication match
Customer History	Previous interaction records	Medium - Context factor

Factor	Description	Impact
Agent State	Idle, working, after-call work	High - Real-time factor

Implementation Guide

Step 1: Prerequisites & Planning

1. Ensure organization has Premium edition
2. Purchase Workforce Optimization module
3. Audit existing agent skills database
4. Document required skill sets
5. Review current routing rules
6. Plan migration from legacy routing

Step 2: Configure Skill Definitions

1. Navigate to Admin → Architect → Skills
2. Create skill categories (technical, language, product)
3. Define skill levels (1-5 proficiency)
4. Assign skills to agents
5. Establish mastery thresholds
6. Document skill requirements per queue

Step 3: Enable Predictive Routing

1. Go to Admin → Contact Center → Routing
2. Select queue to enable predictive routing
3. Enable "Predictive Routing" toggle
4. Configure routing rules (optional overrides)
5. Set skill matching parameters
6. Define fallback routing behavior

Step 4: Testing & Validation

1. Route test calls through system
2. Monitor agent assignment accuracy
3. Verify skill matching

4. Check queue distribution
5. Validate omnichannel routing
6. Review abandonment rates

Step 5: Monitoring & Optimization

1. Review routing analytics daily
2. Monitor first-contact resolution rates
3. Track agent utilization
4. Measure customer satisfaction
5. Optimize skill assignments
6. Adjust thresholds as needed

How to Implement

Phase	Description	Timeline
Analysis	Audit current routing and skills	Week 1-2
Configuration	Set up skills, queues, and rules	Week 2-3
Testing	Validate routing logic and assignments	Week 3-4
Pilot	Deploy to test queue with monitoring	Week 4-6
Full Rollout	Enable across all queues	Week 6-8
Optimization	Monitor, tune, and improve	Ongoing

Predictive Routing Architecture

```
Incoming Contact
    ↓
Contact Metadata Analysis
├── Contact Intent
├── Contact Type (Voice/Chat/Email)
├── Language Requirements
└── Skill Requirements
    ↓
```

Predictive Routing Engine
├── Machine Learning Models
├── Real-time Agent Analysis
├── Skill Matching Algorithm
└── Performance Prediction
↓
Agent Evaluation
├── Available Agents
├── Skill Match Score
├── Proficiency Level
├── Historical Performance
└── Queue Load Balance
↓
Optimal Agent Selection
↓
Route Contact
↓
Agent Assignment

Routing Decision Flow

Contact Arrives
↓
Extract Contact Data
├── Intent
├── Channel Type
├── Language
└── Queue Assignment
↓
Predictive Routing Engine Evaluates
├── Agent Availability Status
├── Skill Compatibility
├── Proficiency Levels
├── Current Workload
└── Historical Performance Score
↓
Machine Learning Model Predicts

```
├── Best Agent Match
├── Estimated Resolution Probability
└── Customer Satisfaction Likelihood
    ↓
Route to Optimal Agent
    ↓
If No Optimal Agent Available
├── Queue with Priority Calculation
├── Monitor for Next Available Match
└── Apply Fallback Routing Rules
    ↓
Agent Accepts Contact
```

Routing Rules & Overrides

Hard Rules (Always Applied)

```
Rule Priority: High
├── Agent Availability
├── Required Skills Present
├── Language Match
└── Queue Assignment

Rule Priority: Medium
├── Skill Proficiency Threshold
├── Agent Capacity
├── Contact Type Capability
└── Channel Configuration

Rule Priority: Low
├── Load Balancing
├── Historical Performance
└── Fairness Rotation
```

Skill Configuration Example

Technical Support Queue

Required Skills:
├── Product Knowledge (Level 3+)
│ ├── Software (Level 4)
│ ├── Hardware (Level 3)
│ └── Cloud Services (Level 3)
├── Troubleshooting (Level 3+)
├── Customer Service (Level 2+)
└── English Fluency (Level 3+)

Optional Skills:
├── Advanced Certifications (bonus)
├── Spanish Fluency (secondary channel)
└── VIP Customer Experience (specialized)

Bilingual Sales Queue

Required Skills:
├── Sales Techniques (Level 3+)
├── Product Knowledge (Level 3+)
├── English Fluency (Level 4+)
├── Spanish Fluency (Level 4+)
└── Customer Service (Level 3+)

Optional Skills:
├── Enterprise Sales (bonus)
├── Account Management (bonus)
└── Negotiation (specialized)

Real Flow Scenario: Predictive Routing in Action

Customer Calls Support Line

↓

System Analyzes: "Technical issue with mobile app"

↓

Route Requirements:

├── Skill: Mobile Development (Level 3+)

├── Skill: Customer Service (Level 2+)

├── Language: English

├── Channel: Voice

└── Queue: Technical Support

↓

Predictive Engine Evaluates All Available Agents:

Agent 1 (Sarah)

├── Mobile Development: Level 4 ✓

├── Customer Service: Level 4 ✓

├── Current Load: 1 contact

├── Avg Handle Time: 8 mins

├── FCR Rate: 85% ✓ (BEST MATCH)

Agent 2 (James)

├── Mobile Development: Level 2 (Below threshold)

├── Current Load: 2 contacts

├── FCR Rate: 72%

Agent 3 (Maria)

├── Mobile Development: Level 3 ✓

├── Customer Service: Level 3 ✓

├── Current Load: 3 contacts

├── FCR Rate: 78%

↓

Route to Agent Sarah (Highest Probability of Resolution)

↓

Sarah Answers Call

↓

System Logs Interaction for Future Learning

Omnichannel Predictive Routing

Voice Channels

Inbound Calls

↓

Predictive Routing

↓

Skill-based Queue

↓

Agent Answer

Digital Channels

Chat/Email/Social Arrival

↓

Predictive Routing Engine

↓

Agent Availability Check (across channels)

↓

Route to Agent with Capacity

↓

Agent Manages Omnichannel Load

Contact Blending Example

Agent Can Handle:

├── 1 Voice Call

├── 2 Chat Conversations

├── 1 Email Thread

└── 1 Social Media Message

Total Capacity: 5 Concurrent Contacts

Current Load: 3 Contacts

Available Slots: 2

Real Flow Scenario: Omnichannel Assignment

Multiple Contacts in Queue:
├── Inbound Call (Technical)
├── Chat (Billing Question)
└── Email (Complaint)

Predictive Engine Evaluates:
↓
Agent 1 Capacity: 2 slots available
├── Skills: Technical, Billing, Customer Service ✓
├── Current: 1 Call + 1 Chat
├── Assignment: Route Email (write capability available)
↓
Agent 2 Capacity: 1 slot available
├── Skills: Technical, Billing ✓
├── Current: 1 Chat
├── Assignment: Route Call (available)
↓
Queue Assignment Complete

Usage Scenarios

Scenario	Solution	Outcome
High call volume with variable skill requirements	Enable predictive routing with skill-based queues	Reduced wait times, improved FCR

Scenario	Solution	Outcome
Multiple agent skill levels	Set proficiency thresholds in routing rules	Appropriate complexity matching
Omnichannel contact center	Use predictive routing across all channels	Optimized agent utilization
International operations	Configure language skills and regional routing	Better customer satisfaction
Seasonal staffing fluctuations	Adjust skill assignments dynamically	Maintained service quality
VIP customer handling	Create specialized skill for VIP interactions	Enhanced customer experience

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Predictive Routing Configuration Settings

Queue-Level Settings

Queue Configuration: Technical Support

Routing Mode: Predictive Routing ✓

Skill Matching:
├── Required Skills: Product Knowledge, Troubleshooting
├── Proficiency Threshold: Level 3+
├── Language Match: Required
└── Strict Matching: Enabled

Fallback Behavior:
├── If no perfect match: Lower proficiency threshold
├── Escalation path: Senior support queue
└── Timeout: 30 seconds to find match

Load Balancing:
├── Max contacts per agent: 3
├── Considering ACW time: Yes
└── Fair distribution: Enabled

Monitoring & Analytics Dashboard

Key Metrics to Track

Metric	Target	Purpose
First Contact Resolution (FCR)	>80%	Measure routing effectiveness
Average Handle Time (AHT)	Baseline - 5%	Track efficiency
Agent Utilization	80-90%	Optimize resource use
Customer Satisfaction (CSAT)	>85%	Measure outcomes
Skill Match Rate	>95%	Verify routing accuracy
Queue Abandonment	<5%	Monitor wait times
Call Transfer Rate	<10%	Reduce routing errors

Real-Time Dashboard View

Predictive Routing Performance (Live)

Queue: Technical Support
├── Active Contacts: 24
├── Available Agents: 8
├── Avg Match Score: 4.2/5 ✓
├── Current AHT: 9.2 mins
└── Skill Match %: 96.4%

Top Performing Skills Today:
├── Mobile Development (8 contacts, 87% FCR)
├── Cloud Services (6 contacts, 82% FCR)
└── Hardware Support (4 contacts, 85% FCR)

Agent Performance:
├── Sarah: 4 contacts, 8.1 avg mins, 88% FCR
├── James: 3 contacts, 9.5 avg mins, 79% FCR
└── Maria: 2 contacts, 8.8 avg mins, 84% FCR

Best Practices

Skill Management

- **Keep skills current** - Update agent skills quarterly or after training
- **Avoid over-specialization** - Limit skill count to 8-10 per agent
- **Balance proficiency** - Mix Level 3-4 and Level 2 agents in queues
- **Document requirements** - Clearly define skill needs per queue
- **Regular training** - Invest in skill development to improve proficiency

Routing Optimization

- **Start with hard rules** - Use required skills and language matching first
- **Monitor thresholds** - Adjust proficiency requirements based on performance
- **Test changes** - Implement rule changes gradually
- **Leverage analytics** - Use data to identify routing improvements
- **Continuous tuning** - Predictive routing improves over time with more data

Agent Management

- **Clear skill assignments** - Agents must know their assigned skills
- **Growth paths** - Provide training to increase proficiency levels
- **Regular feedback** - Share routing and performance data
- **Incentivize learning** - Reward skill development
- **Load balance fairly** - Ensure equitable work distribution

Monitoring & Reporting

- **Daily reviews** - Check key metrics and anomalies
- **Weekly analysis** - Identify trends and improvement opportunities
- **Monthly optimization** - Adjust skills and rules as needed
- **Quarterly planning** - Forecast and plan for seasonal changes
- **Annual strategy** - Evaluate overall routing effectiveness

Common Configuration Scenarios

Scenario 1: Small Team (15 agents, 3 skill levels)

Configuration:
├── Premium Edition ✓
├── Workforce Optimization Module ✓
├── Single Queue (Support)
├── 3 Skill Categories (Level 1-4 scaling)
└── Basic Routing Rules

Expected Results:
├── 20-30% improvement in FCR
├── 10-15% reduction in AHT
└── Higher agent satisfaction

Scenario 2: Large Enterprise (200+ agents, multiple queues)

Configuration:
├── Premium Edition ✓
├── Workforce Optimization Module ✓
├── 5-8 Queues (Technical, Billing, Sales, etc.)
├── 15+ Skill Categories with proficiency levels
├── Advanced Routing Rules and Overrides
└── Omnichannel Blending

Expected Results:
├── 25-40% improvement in FCR
├── 15-25% reduction in AHT
├── Significant CSAT increase
└── Better resource utilization

Scenario 3: Multilingual Contact Center (5 languages)

Configuration:

├── Language Skills for each agent

├── Language Matching in Routing Rules

├── Regional Queue Assignment

├── Skill + Language Combination Routing

└── Overflow to general queue if no match

Expected Results:

├── Improved customer satisfaction

├── Reduced transfers

├── Better first contact resolution

└── International service quality

Troubleshooting Guide

Issue	Cause	Resolution
Contacts routing to wrong skill level	Proficiency threshold too low	Increase threshold in routing rules
Long wait times	Predictive routing disabled for queue	Enable predictive routing in queue config
High transfer rates	Skill mismatch in routing	Review and update skill definitions
Uneven agent load	Skill imbalance among agents	Provide training to level skill distribution
Poor FCR rates	Insufficient skill matching	Add more skill categories to definitions
Agents overloaded	Capacity settings too high	Reduce max contacts per agent
Low agent utilization	Skill requirements too strict	Relax proficiency thresholds slightly
Routing delays	Too many hard rules	Simplify rules and priorities
Language mismatch	Language skills not configured	Add language proficiency to agent setup
Module not working	Feature not enabled	Verify Premium edition and module purchase

Real-World Implementation Timeline

Week 1-2: Assessment & Planning

Day 1-2: Kick-off meeting

Day 3-5: Audit current routing and skills

Day 6-10: Design new skill structure

Day 11-14: Plan change management

Week 3-4: Configuration

Day 15-18: Create skill definitions

Day 19-22: Configure queues and rules

Day 23-25: Set up monitoring dashboard

Day 26-28: Document configuration

Week 5-6: Testing & Pilot

Day 29-32: Conduct routing tests

Day 33-36: Deploy to pilot queue

Day 37-40: Monitor pilot performance

Day 41-42: Gather feedback and optimize

Week 7-8: Full Deployment

Day 43-44: Plan rollout schedule

Day 45-52: Deploy to remaining queues

Day 53-56: Monitor and support agents

Naming Convention

Queue Naming with Routing Type

`<Department>_<Function>_<RoutingType>_Queue`

Examples:

- `Support_Technical_PredictiveRouting_Queue`
- `Sales_Enterprise_PredictiveRouting_Queue`
- `Billing_Collections_PredictiveRouting_Queue`

Skill Naming Convention

`<Category>_<SubCategory>_<Level>`

Examples:

- `Product_MobileApp_Skill`
- `Language_Spanish_Fluency`
- `Service_VIP_Handling`
- `Technical_CloudServices_Certification`

Integration with Other Systems

Workforce Management (WFM)

```
Predictive Routing ←→ WFM
├── Share agent availability
├── Schedule compliance
├── Forecasting data
└── Staffing adjustments
```

Quality Management

Predictive Routing ←→ Quality Management
├── Interaction recordings
├── Performance metrics
├── Coaching opportunities
└── Training recommendations

Customer Data Platform

Predictive Routing ←→ Customer Data
├── Customer history
├── Preferences
├── Previous resolutions
└── VIP status

Performance Benchmarks

Industry Standard Improvements

Metric	Typical Improvement
First Contact Resolution	+15-40%
Average Handle Time	-10-25%
Customer Satisfaction	+10-25%
Agent Utilization	+5-15%
Queue Abandonment	-20-50%
Cost Per Contact	-10-20%

Ramp-Up Timeline

Day 1-30: Learning phase, marginal improvement
Month 2-3: System learns patterns, 10-15% improvement
Month 4-6: Optimized configuration, 25-35% improvement
Month 6+: Mature state, 30-40% improvement

Predictive Routing vs. Traditional Routing

Feature	Predictive Routing	Traditional Routing
Skill Matching	AI-optimized	Rules-based
Agent Selection	Predictive	Sequential
Learning	Continuous	None
Complexity	High	Low
Setup Time	Medium	Low
Optimization	Automatic	Manual
FCR Improvement	25-40%	Baseline
Cost	Higher	Lower

Interview Cheat Sheet

Question	Answer
What is Predictive Routing?	AI-powered routing system that optimizes agent assignment using ML
What are the requirements?	Premium edition + Workforce Optimization module
How does it select agents?	Analyzes skills, availability, performance, and predicts best match
What factors does it consider?	Skills, proficiency, availability, workload, language, history
Can you use it with omnichannel?	Yes, works with voice, chat, email, and messaging
How is it different from skill-based routing?	Uses ML to predict best match vs. just checking skills
Where do you configure it?	Admin → Contact Center → Routing
What's the expected improvement?	FCR +25-40%, AHT -10-25%, CSAT +10-25%
How long does setup take?	4-8 weeks depending on complexity
What are critical success factors?	Accurate skills data, proper proficiency levels, continuous monitoring

Question	Answer
How do you monitor performance?	Daily dashboard review, weekly analytics, monthly optimization
What if no perfect agent match exists?	System queues contact with fallback routing rules
Can you override predictive routing?	Yes, hard rules take precedence (availability, required skills)
How does machine learning help?	Learns from past outcomes to improve future routing
What's the ROI timeline?	2-3 months to see significant improvements

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Key Takeaways

- **AI-Powered Optimization** - Predictive routing uses machine learning to match contacts to best-fit agents
- **Skill-Based Foundation** - Requires well-defined skills and proficiency levels
- **Omnichannel Capable** - Works across voice, chat, email, and messaging channels
- **Continuous Learning** - System improves routing decisions over time
- **Premium Feature** - Requires Premium edition and Workforce Optimization module
- **Significant ROI** - Typical improvements: FCR +25-40%, AHT -10-25%
- **Real-Time Optimization** - Routes contacts dynamically based on current system state
- **Fallback Rules Matter** - Hard rules ensure quality even without perfect matches
- **Change Management Critical** - Proper implementation and monitoring are essential
- **Ongoing Monitoring Required** - Daily reviews and monthly tuning maximize benefits

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Migration Path from Traditional Routing

Phase 1: Preparation (Weeks 1-2)

```
├── Audit current routing rules
├── Document all skills currently used
├── Identify skill gaps
└── Plan queue restructuring
```

Phase 2: Setup (Weeks 3-4)

```
├── Create comprehensive skill definitions
├── Assign skills and proficiency to agents
├── Configure predictive routing queues
└── Establish monitoring dashboards
```

Phase 3: Pilot (Weeks 5-6)

```
├── Enable on low-risk queue
├── Monitor closely for issues
├── Gather team feedback
└── Optimize configuration
```

Phase 4: Rollout (Weeks 7-8)

```
├── Disable traditional routing rules
├── Enable predictive on remaining queues
├── Support agents through transition
└── Celebrate early wins
```

Additional Resources

Official Documentation Links

- Genesys Cloud Routing Guide: https://help.genesys.com/genesyscloud/current/en-us/Routing.html
- Predictive Routing Setup: https://help.genesys.com/genesyscloud/current/en-us/PredictiveRouting.html
- Workforce Optimization: https://help.genesys.com/genesyscloud/current/en-us/WFO.html

Support Contacts

- Genesys Sales: sales@genesys.com

- Genesys Support: https://support.genesys.com
- Community Forums: https://community.genesys.com

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